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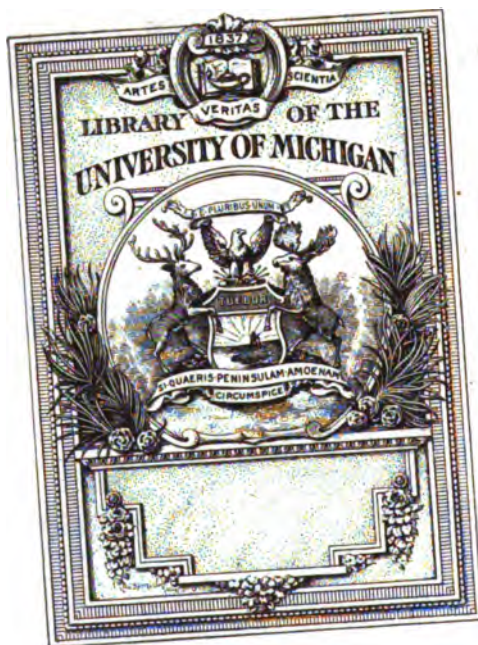
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ANNALS

—OF—

GYNÆCOLOGY AND PÆDIATRY,

A MONTHLY REVIEW OF

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and the Diseases of Children.

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ANNALS

—OF—

GYNÆCOLOGY AND PÆDIATRY.

VOL. VIII.

OCTOBER, 1894.

No 1.

Report in Abdominal Surgery, Being an Analysis of One Hundred and Forty-five Cases not Previously Reported, Done upon the Ovaries and Uterine Appendages, with Special Remarks as to Preparation of Patient, Place of Operation, Use of Drainage, Treatment and Results.

BY A. VAN DER VEER., M. D.,
ALBANY, N. Y.

MR. PRESIDENT AND FELLOWS:—
In presenting this report in abdominal surgery, with accompanying table, I desire to state that the 145 cases do not include any of my work in supravaginal hysterectomy, excepting Nos. 112 and 114, cases complicated with ovarian tumors, or solid tumors of the ovaries or broad ligaments, cases of hysterо-epilepsy, cases of tubercular peritonitis, of gall-bladder surgery, of appendicitis; or of any operations whatever within the peritoneal cavity, previously reported by myself in former papers, with one exception, case 42. The operations here reported were done for removal of ovarian tumors and pathological conditions associated with the ovaries and uterine appendages. It is true

that some of the cases were simple tubercular peritonitis, in which the appendages were not removed, but the history of the case, in each instance, and direct physical examination, gave some little question as to whether there might not be an ovarian complication with the suspected tubercular trouble. It is my desire in making this analysis to present first the rate of mortality, and in doing this I realize that my work is far from being as successful as I could have wished, and yet, in a personal, critical retrospection of the causes of death, I feel that I have gathered an experience that will be to the benefit of my future patients, and I trust somewhat to those of my associates and successors why may continue to do this line of work.

Read before the American Association of Obstetricians and Gynecologists, Toronto, 1894.

In examining the table you will

observe that there have been 17 deaths. My criticism upon this mortality would be that these cases should be classified under two heads, avoidable and unavoidable deaths. In the former I would place cases Nos. 10, 43, 66, 86 and 102.

CASE X.—Miss M. W., a simple, uncomplicated ovarian cyst; death on 14th day, with no serious symptoms presenting at any time, excepting a rapid pulse, for a period of nearly three days previous to death. Autopsy revealed pelvis containing a large number of clots, and the same condition of hæmorrhage had extended up into the abdominal cavity, particularly in the right lumbar region, clots undergoing septic change, but no pus present, nor had there been any evidence of distension of the abdomen or any condition to indicate true peritonitis. On careful examination of the pedicle the ligature had evidently loosened, and on tracing its history it was found to have come from a stock of silk imperfectly prepared, and of which I did not use any afterwards. Could the hæmorrhage have been discovered earlier, which would have been the result had a drainage tube been made use of, the pedicle re-ligated, and cavity washed out it might have saved her life.

CASE XLIII.—Miss J. S. Another case of uncomplicated ovarian cyst, the last case in which I made use of the Staffordshire knot. Patient did well for five hours after the operation, then internal hæmorrhage presented, abdomen re-opened, pedicle re-ligated, free use of saline solution into the peritoneal cavity, drainage, and while

she did well for a time, yet she died within twelve hours from the time of the operation from immediate hæmorrhage.

CASE XLVI.—Mrs. M. K. A case of immediate hæmorrhage from a broad pedicle; controlled at once. Patient gave evidence of internal hæmorrhage at end of five hours; pulse 140, was restless; abdomen re-opened; everything found in good condition. Patient did well later on, but died unexpectedly, February 8, 1892, at 5 P. M., from pulmonary embolism of right lung, with clot in right heart.

CASE LXXXVI.—Mrs. M. B. A case of early tapping, when the operation should have been done; complicated with pregnancy, and an early operation was eminently the thing for her.

CASE CII.—Mrs. J. C. D. Plainly a case of delayed operation for extra uterine pregnancy, and illustrates the necessity of the surgeon not allowing the pleading of the patient to move him in the least in his line of action.

Of the unavoidable cases, 1, 80, 116, were cases of intestinal obstruction, following adhesions of coils of small intestine to the stump of pedicle, producing obstruction.

CASE CXXIV.—Mrs. M. S. This was a desperate case of multilocular ovarian cyst in a patient aged 71. Previously tapped, had recently suffered from grippe and she really died from shock.

In some of my earlier exploratory operations I gained the impression that perhaps I ought to have been more thorough in the removal of

diseased tubes, although I felt at the time it would be entirely at the risk of the patient dying on the table, or from shock. With a larger experience, and fuller confidence, I have of late completed operations that were quite formidable, and in doing these have possibly added to my mortality list somewhat, but where death has resulted I do not see how it could have been avoided.

CASE XX.—Mrs. B. A. aged 22, grandfather died of phthisis; menstruated at sixteen, always had dysmenorrhœa; never pregnant. Met with an injury May, 1888, and dates trouble from that time. October following abdomen began to enlarge. April 18, 1889, was tapped and 50 pounds of fluid drawn. When in full health weighed 138 pounds. Menstruation previous to operation somewhat irregular; lost much in flesh, great loss of appetite; bowels regular, pulse 120, respiration 22, circumference at umbilicus about 44 inches. Though desperately ill, yet she and her friends were anxious to have an operation. Cœliotomy August 22, 1889; time required, one hour and thirteen minutes. Very extensive and firm adhesions of sac to peritoneum, requiring much time in controlling hæmorrhage, with thorough irrigation of abdominal cavity. Removal of multilocular cyst, left ovary. Right ovary somewhat enlarged with evidence of another cyst developing also removed. Glass drainage tube, Shock very severe. Every effort made to bring patient out of this condition; hot saline injections into peritoneal cavity, etc., but she died

in a condition of collapse 4 P. M. August 30. Autopsy showed no hæmorrhage within the peritoneal cavity, everything correct in that direction. The case was probably a hopeless one from the beginning and illustrates the seriousness of delay and the evil results of tapping.

CASE LXXIII.—Mrs. L. G., aged 42, married, family history negative. Menstruation at thirteen; normal. One child, no miscarriages. July, 1891, suffered pain in region of right ovary. Severe attacks since, with continued vomiting. Two years after first attack abdomen began to enlarge, continued to increase in size, and measured 46 inches around umbilicus. May 27, 1892. Constant thirst. Examination of urine showed specific gravity to be 1038, and a large quantity of sugar present. Notwithstanding this I was induced to operate and did a coeliotomy May 29, 1892. Multilocular cyst from left ovary; glass drainage, removal second day. Up to this time patient gave no unfavorable symptoms. Secretion of urine had been abundant, specific gravity 1030, color unchanged, reaction acid, ethereal odor, no albumin, but large quantity of sugar present. Amount of urine passed on second day, 24 hours after operation, was 56 ounces, when secretion suddenly ceased, patient suddenly sank into a comatose condition and died on the night of the third day after operation. Truly this was a case not suited to any operative interference, and should have been left alone or merely tapped.

CASE LXXXIX.—Mrs. D. S., aged 34, married, family history negative.

Menstruated at 13; normal. Mother of three children, one living; five miscarriages. March, 1892, was very ill and from the history of the case probably had pelvic peritonitis. Husband very dissipated, and treated for specific urethritis. After this illness she was able to get up and about, but not in full health, and in August, 1892, was taken ill with another similar attack, and from that time up to the date of operation was confined to her bed most of the time, much emaciated, suffering much pain in region of pelvis, very tender and sensitive over abdomen. I saw the patient first November 7, 1892, and advised her to come to the hospital for removal of the uterine appendages, believing the case to be one of double pyosalpinx, having a specific origin, but she was dilatory in following out advice; growing constantly weaker, finally reached the hospital February 8, 1893. Requiring preliminary treatment, coeliotomy was done February 11. Tubes were found very much distended, filled with pus, and on the left side large abscess. Sac attached to rectum, very serious adhesions, and operation long and tedious, but finally completed, cavity thoroughly flushed with hot saline solution, and left in nice, dry condition, all bleeding points having been controlled. No drainage. Patient reacted well from anæsthetic, kidneys did their work well, very little vomiting, and symptoms seemed favorable, but she died in a condition of exhaustion on the third day.

CASE CXXIII.—Mrs. E. M., family history good. Patient usually in

fairly good health, though suffering much from pelvic pains at different times, but able to get about until two months previous to operation, when she suffered from severe pelvic peritonitis, with undoubted salpingitis. On examination, diagnosis of double pyosalpinx, with adhesions. Patient emaciated and weakened. Coeliotomy, December, 15, 1893, at 11 A. M. Left ovary very adherent to surrounding structures and liberated with great difficulty. Trendelenberg position, considerable hæmorrhage. Right ovary very adherent and great difficulty in releasing it. Appendages thoroughly removed. Bleeding points controlled with one exception down on right side, where it seemed impossible to place a ligature. Long artery forceps placed and left in position. Cavity of abdomen thoroughly flushed with saline solution. Glass drainage and tampons of iodoform gauze inserted around tube and forceps. Operation, 80 minutes. Took anæsthetic very nicely, but none given for last half hour of operation. Patient did not rally and died from shock at 10.50 P. M., day of operation. Impossible to have lessened this operation in any way. It was either to abandon it in the beginning or to go on and complete, and the result proved that it was too much for her strength.

It will be observed the table contains a record of two cases dying from peritonitis, and as given below.

CASE XVI.—Miss I. R., aged 26. Family history only fairly good. Patient from time of menstruation, at 13, had always suffered from dysme-

menstruation and had had severe, well-marked attacks of pelvic peritonitis. When I saw her with her family physician she was very much emaciated and feeble, but with great effort continued her work, that of book-keeper in a large store. Had had much trouble with her stomach with vomiting, and continuous indigestion. Operation seemed advisable, the case being evidently one of salpingitis, and probably double pyosalpinx. Coeliotomy, April 5, 1889, revealing very many firm adhesions, difficult of separation, but removal of appendages completed. Hæmorrhage well controlled and pelvis left in a good, dry condition. Patient continued to vomit almost from the time of operation, at last a spinach-like substance. No distension of abdomen; bowels were moved safely, no symptoms of obstruction, but patient died from inanition on the 11th day. Autopsy showed evidence of general peritonitis. Careful going over of the technique of the operation and surroundings failed to show any evidence of error.

CASE LXXVII.—Mrs. H. C., aged 40, widow, family history of phthisis. Menstruated at 12, regular but painful, always more or less nauseated at this time, with vomiting. Married at 36. Husband dissipated and married life not a happy one. September, 1890, had her first attack of pelvic peritonitis, six months later another attack; three months after her first attack her physician noticed enlargement on the left side near broad ligament. Tumor gradually enlarged. December 11, 1891, patient suffered from chills and other evidences of

suppuration, had trouble in urinating, great insomnia and nervousness; difficulty in getting bowels to move. Patient continued much in this condition, at times improving sufficiently so that she could get about, and at one time came to my office, where, on examination, I had but to confirm her physician's diagnosis of double pyosalpinx with pelvic abscesses; origin probably specific. After much hesitancy the patient finally consented to an operation. An attempt had been made to reach the tubes through the vaginal wall by aspiration, by another physician. Coeliotomy, October 10, 1892. Double pyosalpinx, removal of uterine appendages very tedious, taking a long time. They were the largest and abscess cavity the greatest of any specimen I have ever removed. Glass drainage; the discharge being carefully examined by my assistant, gave evidence of gonococci present. Patient rallied well from the operation and everything seemed to be going along safely up to the end of the fourth day, when she began to vomit; presented evidences of peritonitis and died at the end of the sixth day.

CASE CXXXIV.—Mrs. H. A. L., aged 43, married thirteen years, no children. Widow at time of operation. During her married life almost constantly under treatment, seeing many physicians for uterine trouble, had worn all manner of pessaries, confined to her bed frequently for one year at a time, suffering much from severe leucorrhœal trouble, at times from dysmenorrhœal trouble, and in fact all the symptoms

peculiar to pelvic disturbances. I saw her five years previous to operation in consultation with her family physician, found her suffering severely from retroversion, enlarged tubes and every evidence of pyosalpinx. Advised an operation, but patient would not consent. She was of a very nervous, fretful temperament. During the five years following this consultation she had a variety of treatment, but most of the time made use of tampons herself; would recover, get up for a month or two, but confined most of the time to her bed, suffering from great irritation of the bladder; frequently was constipated, and very careless in every respect, in the care of her person; had little love for medical profession, and no kind word for any one. Finally in February, 1894, she consented to have an operation, it requiring nearly a week's labor on the part of the nurse to get the surface of the body and the vagina in any kind of aseptic condition. She was absolutely rebellious to the taking of a bath and proper evacuation of her bowels. Made an effort to quarrel with the nurse and on the morning of the operation, furious because the nurse insisted upon giving her an additional scrubbing. Cœliotomy March 30, 1894. Diagnosis confirmed. Operation difficult, though adhesions gave little trouble in the way of hemorrhage. Patient recovered from the ether quickly, but was rebellious in every respect as to carrying out the line of treatment. Insisted upon sitting up in bed, objected to the use of bed-pan. Little disturbance from vomiting, not much

tenderness over abdomen, but it was very difficult to keep the dressings on, she was so restless. Bowels moved at the end of second day thoroughly 'well. At this time noticed an abscess developing in left labia, which was opened and discharged pus very freely. Stitch-hole abscess in lower end of incision. At this time began to vomit, and this kept up more or less continuously. Wore out the patience and strength of two nurses, and at last we gave her a hypodermic injection of morphia, learning then that she had been using it for a long time. The wound in every respect, aside from stitch-hole abscess, presented a healthy appearance, and healed quickly, but the patient died, evidently of septic peritonitis, April 5, 1894. No autopsy. I think I voice the sentiment of every operator when expressing the desire to be delivered from such a patient.

The last case on the list of mortality belongs to a class in which I have not had much personal experience, *i. e.*, puerperal pyosalpinx.

CASE XCIII.—Mrs. S., aged 27. About two weeks previously she had been confined, accouchement being apparently normal in every respect. On the fourth day she developed chills and a high temperature, when her consulting physician deemed it advisable to do a thorough curetting of the uterus, bringing away some detritus and patient improved, but relapsed again in a few days, when a second curetting was done. Believing then that the case was one of pyosalpinx I was called in consultation, telegram requesting me to come

prepared to operate. Patient was having a temperature of 104 and upwards, with very decided chills and severe perspiration. There was no abdominal distension, no evidence of general peritonitis, bowels moving and in good condition, but local tenderness over the pelvic region. Uterus well contracted. Cœliotomy, April 19, 1893. Left tube and ovary found absolutely normal; right ovary enlarged, as well as tube, giving some evidence of septic condition, and removed. Patient recovered well from the operation, although there was a slight tendency to suppuration of one superficial stitch. Chills were not controlled. Everything had been done from a medical standpoint, as to remedies, but patient gradually grew worse, developed casts in urine and died on fourth day. Examination of the ovary did not reveal any marked septic suppuration. This case was probably one of true septicæmia.

I am not unmindful that it would have been much more comforting to myself to have commenced this paper by reporting to you first my successful cases; cases that have brought to me much encouragement in my work, meeting patients in improved health, and receiving letters filled with gratitude and acknowledgement of recovery, but to most of these the table gives sufficient reference.

Regarding the preparation of patients, it seems to me quite difficult to establish a fixed line of action. I believe that, so far as possible, it is wise to carry out the preparations at home, before the patient enters upon hospital life. It is true that there

are some cases very calm and not affected by the thought of entering the hospital, and yet there are many who are made somewhat nervous by being kept under observation too long away from home. I would like to emphasize somewhat the importance of regulating the bowels and proper attention to such diet as does not constipate, previous to the time of operation. I also wish to say that I place much stress upon the importance of a careful examination of the urine.

Now that we understand so well the evil effects of the bacillus coli communis we should see that the intestinal tract is put in a good, sanitary condition. The previous habit of the patient as to the use of morphine or opium should be carefully observed, and is not a contra-indication to operation, but the same will necessarily be needed after, and without fear in giving as full doses as may be required to control pain.

As to the preparation of the room, I have long since done away with the use of the carbolic spray, having had a tiresome experience in that direction, and rely upon thorough cleanliness, washing all wood work, walls and floors with the bichloride solution.

A large proportion of these cases reported were operated upon in the amphitheatre of the Albany Hospital, and some in the presence of one hundred and fifty or more students. As to the length of the incision I can only say that my experience endorses all that Dr. Joseph Price has said in his admirable paper upon this sub-

ject. I have endeavored to make it as short as possible with safety.

As to the use of the drainage tube it may be said that I have used it with greater freedom than most of the operators at the present time. I must be excused somewhat by reason of the anxiety I have experienced in immediate hæmorrhage, in the two cases reported, and therefore, have felt that the tube wherever there was any possible fear of this occurring, or where the oozing was likely to be greater than the peritoneum could care for, was the safest procedure. I have employed it in 39 cases, exclusive of the cases of tubercular peritonitis proper, and have not hesitated to leave it in as long as the gauze tent introduced through the calibre of the tube gave no disagreeable staining, removing it sometimes within six hours after after the operation, and sometimes leaving it in from eight to ten days. Where left in this length of time have followed it with the rubber tube. I have invariably made use of the rubber dam and then employed the gauze packing instead of the syringe for removal of the accumulating fluid, and have found this procedure quite as comfortable to the patient, and to myself it has seemed better than the employment of the syringe. I may be mistaken, but I believe that this table of cases exhibits quite as many and as severe adhesions as present in the average run of cœliotomies. Of the wholenumber 12 cases gave a record of previousappings, and only two or three had escaped adhesive inflammation.

Regarding the closure of the wound

in the use of silk, however well prepared, I have had occasionally a stitch-hole abscess. For the past four years I have used silkworm-gut exclusively, and have very seldom met with this condition, as the table will show. I desire to emphasize here that I know of no kind of operative surgery that requires such careful apposition of wound surfaces, bringing like tissue in connection with like, as in the abdominal incision. I have not made use of the different rows of sutures, still I am not unmindful of the valuable arguments presented in favor of this procedure.

As to the time of removing the stitches it is well if the superficial ones are removed at the end of the second day, or during the first dressing of the wound, and then the deep ones I believe it is wise to leave until about the tenth day. They do no harm and certainly help to keep the abdominal incision in more perfect apposition.

In conditions of continued oozing from adhesions, and where the abdominal walls have been greatly stretched by size of the tumor, I must say that I have seen, in two of my cases, a most happy result from folding the abdominal wall over, having previously put in through and through sutures of silkworm-gut, taking them out at the end of forty-eight hours.

As to hernias resulting, as far as I have been able to learn, I know of but three cases, and in one instance this was plainly due to the carelessness of the patient in attempting too much heavy lifting within so short a time after the operation.

As to the dressing of the wound I have uniformly employed the powdered iodoform, then the iodoform gauze, with the Gamgee pads and flannel bandage, doing the first dressing at the end of forty-eight hours, removing what is usually but soiled iodoform gauze, reapplying the second dressing and letting it remain until the wound is healed, except in cases where the drainage tube may have produced some soiling.

Out of this number of cases I can report only one where the Fallopian tubes were freed from adhesions, straightened — not removing the ovaries — and a good result followed.

It will be observed that my mortality list contains three cases in which a fatal intestinal obstruction was due to a coil of intestine becoming fastened to the stump of the pedicle. For the past two years, in such cases where the stump seemed to flatten out over the ligature, I have brought the peritoneal surfaces together with one, two or three interrupted sutures of very fine silk, and comfort myself with the belief that it has perhaps had some effect in obviating this unfortunate post-operative complication.

The annoying cases I have found, and somewhat disastrous, are those brought to me by the family physician desiring an immediate operation that day or the next morning, in order that he might return home, but anxious to see the operation. These cases are fortunately growing less and less, as the members of the profession realize more and more the importance of preparatory treatment,

and of the operator seeing the case long enough in advance to feel sure of his diagnosis and operative procedure. I wish to make an observation, and that is in reference to the serious cases that are likely to come from one particular practitioner, one who procrastinates and keeps the patient, either by medication or tapping, under his treatment as long as possible, and then suggests operative interference when all the chances are against the surgeon. My mortality list contains three of these cases from one practitioner. I do not wish to criticize, but would enter a plea that wherever an adominal tumor presents, in the practice of any physician, that it becomes almost his duty to call in the aid of a surgical assistant, that the line of treatment may be agreed upon as early as possible. In the study of these cases I have been impressed in one or two or three by the very marked history given by the patient of the tumor having appeared on one side, and yet when the operation was reached the pedicle and attachment was found on the other side.

As to the pulse and temperature I am satisfied that the former is of far more importance than the taking of the latter. The heart's action plainly tells of serious trouble going on in the way of intestinal obstruction, or of either form of peritonitis. There are many conditions really non-essential as to the recovery of our patient, that will cause an increase in temperature, apparently alarming. Any nerve strain, a visit from a friend, the discharge of blood that

occurs from the vagina after an operation, and which appears in quite a number of cases, will sometimes prostrate the patient mentally, in itself producing an increase of temperature, but is of no serious import as regards recovery.

In getting the histories of patients I have been much impressed with the number of cases having a family history of phthisis, or malignancy. Thirty-nine cases of this table gave a district history of phthisis, 15 of cancer in some form, while 57 gave a history of marked irregularity of menstruation, with dysmenorrhœa, many of them from the beginning of the menstrual act.

Making a closer analysis of the table there were 39 cases of ovarian cyst, multilocular, with five deaths; 25 cases of ovarian cyst unilocular, with two deaths; three cases of double ovarian cyst, multilocular, with one death; two cases of multilocular cyst complicated with pregnancy, with one death; two cases of double multilocular ovarian cyst, complicated with fibroid tumors, with one death; there were 27 cases of double pyosalpinx, with three deaths; 20 cases of pelvic peritonitis and salpingitis, with two deaths; four cases of pyosalpinx, unilateral, with one death; tubercular peritonitis, six cases; tubercular peritonitis, with removal of one or both ovaries, five cases; chronic ovaritis, six cases; extra-uterine pregnancy, three cases, with one death; exploratory incision-relieving adhesions and straightening tube, one case; one case double pyosalpinx and removal of appendix; re-

moval of uterine appendages for uterine fibroid, one case, making a total percentage of mortality in 145 cases of 11 per cent.

Among the cases of recovery there are a few thoroughly instructive, to which I would like to refer for a moment.

Cases XXXV and LIX constitute the same patient. Miss L. McC., aged 23, in good health up to 14, when she had scarlet fever. Menstruated at 13, regular, painful and troublesome, vomiting at this time. Met with an injury and was treated for a long time for spinal trouble. Finally was told that she had a retroverted uterus. Had treatment for this for a period of four months, then slipped on ice, receiving a severe fall and strain, and not well after. Vomited for four weeks, March, 1889, in Seney Hospital, Brooklyn, and Dr. Pilcher did Alexander's operation for relief of the retroversion. After that suffered more severe pain during her menstrual period, confined to her bed most of the time, and not able to walk. Flow presented with many clots. Entered Albany Hospital, April, 1890, and uterus carefully curetted after rapid dilatation, but no improvement followed. Complained of constant pain in region of right ovary. Patient no better, cœliotomy done October 7, 1890. Right ovary enlarged, about size of a turkey's egg, tube much thickened and removed with ovary. Left ovary and tube apparently in a healthy condition and not disturbed. Recovery uneventful, and discharged November 3, 1890. Operation did not afford permanent

relief. Later patient continued to suffer severely with pain in back and left inguinal region. Various kinds of treatment tried, tonics, out-door exercise, etc., yet continued to grow worse apparently, and on November 9, 1891, second celiotomy was done. Left ovary size of a small orange found undergoing cystic degeneration, tube also enlarged, and both removed. Patient reacted well from operation, much nauseated for several days, after which made an uninterrupted recovery. Discharged on twenty-ninth day, began to improve and in excellent health September 1, 1894.

CASE XXXVIII. — Mrs. S. K., family history good. Menstruated at 12, always painful, flow at times dark and clotted, otherwise bright red looking. For four years previous to operation had severe brownish-looking, offensive discharge from vagina. Married over two years, no pregnancies. Steady pain in ovarian and across lumbar regions. Husband admitted having had specific urethritis. On examination tubes could be well defined. Diagnosis of pyosalpinx, and operation recommended. Celiotomy, October 30, 1890. Bi-lateral pyosalpinx with double parovarian cysts and a small fibroid size of an English walnut discovered on fundus of uterus. Uterine appendages removed and then the fibroid. The latter carefully dissected from the fundus, but the bleeding was very severe and controlled by the application of the thermo-cautery. Glass drainage tube introduced. Drainage kept up quite freely for forty-eight hours, then a rubber tube substituted

and kept in for another five days. On November 2d there was a copious sero-sanious discharge from vagina, not offensive. Bowels moved on third day with enema. About this time pulse reached 102, then became normal. Vaginal douches were made use of freely. Recovery uneventful. Discharged on eighteenth day. Eight weeks after the operation a small abscess formed in sinus left by the drainage tube, through which escaped one of the ligatures.

CASE XLI. — Miss E. K., age 33, health during childhood not good. At 11 had trouble with abdominal enlargement, which she thought due to dropsy, Drs. March and Swinburne giving a very unfavorable report. Under treatment of local physician enlargement disappeared. Had multiple abscesses about left leg, above ankle, finally operated upon by Dr. March and necrosed portions of bone removed. No further disturbance until 1886 when old cicatrices opened up partially. Dr. Morrow advised her to go to Albany Hospital, but advice not followed. First menstruated at 17, regular until three months previous to operation, when flow ceased. March, 1890, felt sudden, sharp pain in each groin, after lifting a heavy washing, followed by enlargement on both sides corresponding to double femoral hernia, from which she then suffered. Abdomen now enlarged. In July, 1890, Dr. Townsend advised an operation for ovarian tumor. Patient did not follow advise, nor consult any one until December, 1890, when she came to me. Growth increased rapidly in

the meantime. Enlargement began on right side. Cœliotomy, January, 30, 1891. Cyst connected with right ovary had ruptured. Multilocular cyst of left ovary, together with uterine appendages, also removed. Both cysts contained a viscid, glairy mass, some remaining behind having become agglutinated to intestine. Thorough irrigation; glass drainage tube removed third day; bowels moved fourth day several times. Severe diarrhœa developed, finally controlled. Tenth day lower angle wound opened and discharged four to five ounces of fetid pus, after which patient improved rapidly, made a good recovery, and discharged April 29, fistula almost healed.

CASE XLIV.—Mrs. A. E., family and personal history good. No pregnancies. Trouble began December, 1890, enlargement of right side near spine of ilium going on rapidly. Much emaciated. Abdomen much distended above umbilicus, dullness over part of epigastrium, whole of hypogastric region, both inguinal and lumbar regions. On percussion deep wave transmitted, palpitation showed solid growth situated on left side. Stomach in good condition. Cœliotomy March 3, 1891. Cyst from left ovary papillomatous in character, containing three gallons of fluid, some adhesions. Connected with right ovary, and closely adherent to surrounding tissues was another cyst. Tapped and emptied of a viscid fluid, of a dirty brownish color. In bottom of cyst was another papillomatous growth. Adhesions were such that it was impossible to remove this entire; cyst

walls were stitched to abdominal wound, and rubber drainage introduced. In pelvic cavity, on left side, a glass drainage tube was placed. Patient recovered quickly and was discharged much improved, May 18, 1891. A slight sinus connected with the cyst on right side still existed. Re-admitted June 13, 1891, with a partial obstruction of bowels, which yielded, however, to calomel, salines and enemas. Sinus closed but wound showed tendency to open and mass could be felt connected with right side of pelvis. Occasionally suffered pain and morphia required. Improved slowly and was finally discharged August 12, 1891, having gained in flesh and strength. Was seen occasionally afterwards, and January, 1892, was in very good health, free from pain, able to go on with her work, gaining greatly in flesh and strength. January, 1893, she had a return of the intestinal obstruction, and was re-admitted to the hospital. Great distension of abdomen. Lower portion of old cicatrix incised and immediate presentation of the old papillomatous growth filling right side of pelvis. In attempting to enucleate the mass the small intestine was opened into. Gauze packing was introduced, supposing that the patient could scarcely recover, but by continuous irrigation a great amount of detritus was washed out. Finally fecal fistula closed, patient had normal movements, gained in health, and returned to her work, but during the latter part of the winter of 1894 growth had increased, and in May she suffered from a fistulous open

ing connected with the sarcomatous growth, giving off an offensive discharge. Was losing in flesh and strength. Not heard from since.

CASE XLIX.—Mrs. E. C., aged 33, family history good. Menstruated at 12, not painful until 18, after that suffered from dysmenorrhœa. At 20 had severe peritonitis following exposure and cold. Married at 21, first child one year after; labor very difficult. Dysmenorrhœa ceased after that. Since then has had dull, aching pain on both sides, over ovarian regions. Three years before operation more marked on left side; menstrual flow scanty. In years previous to operation had much headache, considerable pyrosis, and bowels constipated. Treated fall of 1890 for stricture of rectum and lacerated cervix; no improvement. Left side of pelvis filled with mass as large as a good-sized orange. Diagnosis of salpingitis, operation advised, and cœliotomy done May 27, 1891. Both ovaries enlarged, cystic in character, double pyosalpinx. Uterine appendages removed. Many firm adhesions. Glass drainage tube, rubber substituted on third day. Serous discharge still quite free. Rubber drainage removed on seventh day. Some pain over abdomen, dragging pain in pelvis, otherwise recovery uninterrupted, and discharged on twenty-first day. This patient has gone on to a perfect condition of health, and September, 1894, has gained much in flesh and strength; able to get about with absolute comfort.

CASE LVIII.—Miss I. R., aged 19. Diseases of childhood; typhoid fever

at 16. Family history good. Menstruated at 13; menorrhagia and dysmenorrhœa, confined to bed part of time during menstrual act. Always suffered tenderness, particularly over left inguinal region, where pain is constant. Continual pain in back, confined to bed much of the time, and much disturbance of stomach. Diagnosis of chronic ovaritis with salpingitis, and operation advised.

Cœliotomy, October 19, 1891. Left ovary very much atrophied and removed with Fallopian tube. Right in a condition of cystic degeneration, also removed with tubes. Patient had some nausea and vomiting, with considerable pain in abdomen after operation, but soon recovered and had an uneventful convalescence, returning home on the twentieth day. Three months after began to vomit, though having gained much in flesh and strength, which continued more or less, until finally patient became much emaciated, and died with all symptoms of cancer of the stomach, one year after operation.

CASE LXIII.—Mrs. M. B. M., aged 33, family history negative. In good health until birth of first child, November, 1888. Since then had severe attacks of pelvis peritonitis, and suffered constant pain, more or less severe. Under continuous treatment at her home, New York, and elsewhere. No permanent improvement. Patient lost in flesh and grew very despondent. I saw her first with her family physician, Dr. Pond, of Rutland, Vt., December, 1891, and agreed with him fully as to

the diagnosis, pelvic peritonitis with probable pyosalpinx.

Cœliotomy, December 14, 1891. Tubes found very much enlarged, distinct hydrosalpinx on right side, ovaries in a condition of cystic degeneration, many adhesions and a tedious operation. Glass drainage tube. Good recovery, discharged thirty-second day. Remained well, but in October and November, 1893, had discharge from vagina very much like her menstrual flow. This was repeated once during the winter of 1894, and just previous to the latter period Dr. Pond was able to make out a cystic enlargement connected with the right cornu of the uterus. Aside from this, patient in good health. I saw her in May, 1894; no return of discharge; uterus seemed to be atrophied somewhat, but in good position; otherwise pelvis presented normal condition.

CASE XCVI.—Mrs. E. P., aged 55, family history of cancer. Three children; no miscarriages. In 1879 had ovariancyst removed from left side by Dr. Thomas, of New York, and menstruation normal after that until menopause, which occurred just previous to second operation. No further trouble until 1880, when right side began to gradually enlarge, and she was very much distended. Diagnosis multilocular ovarian cyst. Cœliotomy, May 16, 1893. Multilocular cyst right ovary. Uneventful recovery. Discharged on fifteenth day. Case of interest simply, being second operation, second incision being made through the line of old cicatrix, which was found to be in a very good condition.

CASE CVII.—Miss E., aged 20, menstruation fairly regular, but for two years previous to operation suffered much pain in left inguinal region; mental condition not at all good; irrational in talk at times, with a tendency to melancholia. Admitted to Albany Hospital, spring of 1893, found to be suffering from ischio-rectal abscesses, with fistulous tract, also an opening into vagina discharging pus. Very severe case of vaginitis, requiring thorough operation, but at last patient made a good recovery, with the exception of sinus connected with vagina. Mental condition such that later it was thought best to do an oophorectomy. Cœliotomy, October 4, 1893. Left ovary diseased, double pyosalpinx; removal uterine appendages. Patient made a good recovery and some improvement in her general condition. Oinus healed in vagina wall left side.

CASE CXII.—Mrs. H. M., aged 36, family history of cancer and tuberculosis. Menstruated at 14, regular. Married 11 years; four children, no miscarriages. Had when 16 years old what was called bowel complaint, which confined her to bed for some time. In 1891 began to flow more than usual, told by a physician that she was pregnant, but passed period of confinement, then saw Dr. Rossman, of Ancram, N. Y., who told her that she had an ovarian tumor. Does not know on which side tumor was first observed. Tumor did not enlarge rapidly. October, 1892, by advice of Dr. Rossman she consulted me and remained at the Albany Hospital for a short time. Distinct

fluctuation could be made out in right side of abdomen, from pelvic region up. Owing to her feeble condition did not operate, but drew off about two quarts of fluid. This was repeated two or three times during the following year; patient gradually improved, and grew stronger, though her flow continued irregular. Œdema of lower extremities gradually disappeared. October, 1893, I advised an operation, as her condition seemed very much better, diagnosis being that of double ovarian cyst, possibly associated with a fibroid. Cœliotomy October 21, 1893. Double multilocular ovarian cyst removed in the usual manner, fibroid size of cocoanut connected with fundus of uterus, interstitial. Uterine artery secured and broad ligament tied in sections. No clamp. Few adhesions. Bleeding thoroughly controlled, but drainage tube was introduced, removed at end of six hours, packing not stained. Operation one hour and fifty minutes. Fourteenth day lower end of wound opened and quite a portion of pedicle with two silk ligatures came away. Some discharge of pus for ten days. Sinus packed. Patient made recovery and discharged on twenty-seventh day. Doing nicely March, 1894.

CASE CXIV.—Miss M. N., aged 31, family history good. Menstruated at 16, never regular, sometimes flowing every seven or ten days. Spring of 1893 noticed growth in left side of abdomen. Diagnosis of multilocular ovarian cyst. Patient increased very rapidly in size previous to operation. Suffered pain in lower part of abdomen, frequent desire to micturate,

and bowels constipated. Before entering hospital ankles were œdematous. Cœliotomy October 30, 1893. Double ovarian cyst multilocular, One contained about ten pints of fluid, the other not so much. Large fibroid of uterus; removed by supravaginal hysterectomy, Tait clamp. Patient made a good recovery and discharged December 23, 1893.

CASE CXL.—Miss H. V., aged 19, family history good; always healthy with exception of scarlet fever eight years previous to operation. Menstruated at 18; regular. First noticed enlargement left side of abdomen, August, 1893, accompanied with a good deal of aching pain. Tumor increased rapidly. Bowels regular. Loss in flesh quite decided. Cœliotomy January 2, 1894. Large multilocular cyst left ovary containing eleven quarts of fluid, thick viscid. dark-colored. Firm adhesions from left side of abdomen and with some coils of small intestines. Right ovary in a condition of cystic enlargement, and removed with tube. Glass drainage removed second day. Recovery very rapid. Patient homesick and allowed to return home on the tenth day. Returned May 15, 1894 with marked growth left side of pelvis, probably nature of sarcoma. Patient very much emaciated. No further operation advised.

A word as to the time of patient's returning home after an operation. I do not believe that it is always the greatest wisdom to hurry a patient home with encouragement to go on with their household and other duties, and particularly is this true in cases

of removal of uterine appendages, for pyosalpinx and such like conditions. They must be made to understand that all their unpleasant symptoms will not disappear at once. It takes months for them to recover, and they are sometimes greatly disappointed in their hopes not being promptly realized.

I have but one case to report of keen anxiety in the loss of a foreign substance in the peritoneal cavity, and that is case 32, Mrs. J. V., where a small sponge became entangled in mesentry of the small intestine and gave great trouble in the search for it. I am now exceedingly careful about having any very small sponges handed me.

I regret that more careful attention was not paid to the weight of tumors in the table, but part of the work was confided too much to advanced students and house surgeons, and not done thoroughly well.

Three cases give an interesting history of ligatures escaping through the sinus left by the drainage tube, the ligature in one case being of coarser silk than ought to have been used. No ill effect followed, the

sinus being closed as soon as the ligature was recovered. Possibly in one patient, case 31, Mrs. E. H., it may have assisted in causing the hernia.

As to the after treatment I am most rigid in not allowing the patient the use of the hypodermic injection of morphia any more than is absolutely necessary, but prefer to give it where there is restlessness due to a weak heart's action, and where the pain is so great as to be intolerable.

For treatment of persistent vomiting I have seen excellent results from the combined administration of cocaine, calomel and oxalate of cerium, and then I can only endorse the use of calomel and salines for moving the bowels. A movement should be secured if necessary by the aid of injections, as early as the second or third day, not later than the fourth day after the operation. As to diet, my patients have been greatly benefited by the carrying out of the hot water treatment, and the use of matzoon, particularly if the stomach is at all nauseated; also, for relief of thirst, rectal injections of hot water, slightly saline.

TABULATED LIST OF CASES.

No.	NAME.	PHYSICIAN AND RESIDENCE.	AGE. CIVIL.	DIAGNOSIS OF DISEASE.	DATE OF OPERATION.	NATURE OF OPERATION. REMOVAL.	RESULT.	REMARKS.
1	Mrs. C. C.	Dr. Weidman, Medusa, N. Y.	52 M.	Multilocular ovarian cyst.	Feb. 20, 1888.	Multilocular cyst right ovary. Papillomatous. Many adhesions. Short, broad pedicle.	D.	Patient died 4th day from intestinal obstruction. Autopsy, obstruction due to loop small intestine, attaching itself to stump pedicle.
2	Mrs. S. B.	Dr. Chidden, Little Falls, N. Y.	37 M.	Unilocular ovarian cyst.	Feb. 24, 1888.	Diagnosis confirmed. Weight 20 lbs.	R.	Uninterrupted recovery.
3	Mrs. H. C.	Dr. Houston, Cohoes, N. Y.	38 M.	Multilocular ovarian cyst. Sarcoma of mesentery.	April 9, 1888.	Multilocular cyst and uterine appendages. Drainage.	R.	Patient in good health six months after operation.
4	Miss C. D.	Dr. Bush, Springfield, N. Y.	24 S.	Double pyosalpinx, cystic degeneration ovaries.	May 1, 1888.	Uterine amputation.		
5	Mrs. S. W.	Dr. Wright, Canaan N. Y.						
6	Mrs. A. M.	Dr. Hotelling, W. Town-ship, N. Y.						
7	Mrs. A. O'C.	Dr. Grover, Port Henry, N. Y.						
8	Mrs. P. A. R.	Dr. Wheeler, Pittsfield, Mass.						
9	Miss E. B.	Dr. Montgomery, Luzerne, N. Y.	24					

10	Miss M. W.	Dr. Melick, Fort Ed-ward, N. Y.	20 S. Multilocular ovarian cyst, left side.	Oct. 4, 1888.	Diagnosis confirmed.	D.	Death on 14th day from general peritonitis. Autopsy revealed evidence pelvic Hem. probably caused by ligature becoming loosened in some way.
11	Mrs. C. W.	Dr. Noble, Carlo, N. Y.	34 M. Multilocular ovarian cyst.	Nov. 19, 1884.	Multilocular cyst, left ovary. Right healthy, not removed drainage for 48 hours.	R.	Uninterrupted recovery.
12	Mrs. H. T. S.	Dr. Johnson, Belleayre, N. Y.	37 M. Multilocular ovarian cyst.	Dec. 21, 1888.	Diagnosis confirmed, 12 qts. fluid.	R.	Uninterrupted recovery. Patient in good health, June, 1894.
13	Mrs. H. M. R.	Dr. Kelley, Fair Haven, Vt.	29 M. Salpingitis.	Dec. 22, 1888.	Uterine appendages.	R.	Good recovery. Patient had metrorrhagia for six months after operation; finally, complete recovery.
14	Mrs. E. B.	Dr. Van der Veer, Albany, N. Y.	39 M. Pelvic or psoas abscess.	Jan. 4, 1889.	Pyosalpinx. One ovary and tube. Drainage.	R.	Drainage continued for over two weeks.
15	Mrs. N. M.	Dr. Lake, Fair Haven, Vt.	26 M. Tubercular peritonitis.	Jan. 5, 1889.	Right ovary and tube. Drainage.	R.	Mass removed proved on examination to be tubercular. Glass drainage gave much discomfort and 4th day replaced by rubber tube, this removed on 12th day.
16	Miss J. R.	Dr. Du Bois, Albany, N. Y.	26 S. Salpingitis. Pelvic peritonitis.	April 5, 1889.	Uterine appendages.	D.	Death from peritonitis on 11th day. Possibly obstruction.
17	Mrs. M. E. H.	Dr. Wheeler, Chatham, N. Y.	45 M. Multilocular ovarian cyst.	April 12, 1889.	Cyst and ovaries.	R.	Uninterrupted recovery.
18	Mrs. E. C.	26 M. Multilocular cyst, left ovary.	May 21, 1889.	Diagnosis confirmed. Right ovary in state cystic degeneration and removed. Drainage.	R.	Uninterrupted recovery.	
19	Mrs. F. W.	Dr. Van Vranken, Troy, N. Y.	49 M. Unilocular cyst, left ovary.	June 15, 1889.	Multilocular cyst, left ovary. Drainage.	R.	Good recovery but patient suffered from hernia six months after operation.
20	Miss B. A.	Dr. Maxon, Chatham, N. Y.	22 M. Unilocular ovarian cyst.	Aug. 29, 1889.	Unilocular cyst left ovary also right ovary. Very adherent.	D.	Death from shock.

NO.	NAME.	PHYSICIAN AND RESIDENCE.	AGE. CIVIL.	DIAGNOSIS OF DISEASE.	DATE OF OPERATION.	NATURE OF OPERATION. REMOVAL.	RESULT.	REMARKS.
1	Mrs. C. C.	Dr. Weidman, Medusa, N. Y.	52 M.	Multilocular ovarian cyst.	Feb. 20, 1888.	Multilocular cyst right ovary. Papillomatous. Many adhesions. Short, broad pedicle.	D.	Patient died 4th day from intestinal obstruction. Autopsy, obstruction due to loop small intestine, attaching itself to stump pedicle.
2	Mrs. S. B.	Dr. Childen, Little Falls, N. Y.	37 M.	Unilocular ovarian cyst.	Feb. 24, 1888.	Diagnosis confirmed. Weight 20 lbs.	R.	Uninterrupted recovery.
3	Mrs. H. C.	Dr. Houston, Cohoes, N. Y.	63 M.	Multilocular ovarian cyst. Sarcoma of mesentery.	April 9, 1888.	Multilocular cyst and uterine appendages. Drainage.	R.	Patient in good health six months after operation.
4	Miss C. D.	Dr. Bush, Springfield, N. Y.	24 S.	Double pyosalpinx, cystic degeneration ovaries.	May 1, 1888.	Uterine appendages.	R.	Stitch-hole abscess sixth day. Finally good union and excellent recovery.
5	Mrs. S. W.	Dr. Wright, Canaan, N. Y.	43 M.	Unilocular ovarian cyst.	May 15, 1888.	Unilocular cyst, right ovary.	R.	Uninterrupted recovery.
6	Mrs. A. M.	Dr. Hotelling, W. Town-ship, N. Y.	46 M.	Unilocular cyst, left side.	May 31, 1888.	Unilocular cyst, left ovary; also right ovary. Many adhesions. Weight 35 lbs.	R.	Hypodermic injection morphia every six hours for 24 hours, then discontinued.
7	Mrs. A. O'G.	Dr. Grover, Port Henry, N. Y.	46 M.	Multilocular ovarian cyst, left side.	May 31, 1888.	Multilocular cyst left ovary also right ovary. Many adhesions to intestines and bladder. Weight 20 lbs.	R.	Temperature rise on 8th day to 102-104.5 deg. returning to normal on 12th day after tarry, fetid discharge from vagina. No suppuration.
8	Mrs. P. A. R.	Dr. Wheeler, Pittsfield, Mass.	55 W.	Double multilocular ovarian cyst.	July 5, 1888.	Diagnosis confirmed. Some intestinal adhesions giving rise to considerable harm., requiring several ligatures. Weight, 40 lbs.	R.	Uninterrupted recovery.
9	Miss E. B.	Dr. Montgomery, Luzerne, N. Y.	26 S.	Many attacks pelvic peritonitis. Salpingitis.	Oct. 1, 1888.	Uterine appendages. Operation difficult.	R.	Good recovery. Two years later patient died from what at time supposed to be sarcoma of cavity of pelvis.

10	Miss M. W.	Dr. Melick, Fort Ed-ward, N. Y.	20	8.	Multilocular ovarian cyst, left side.	Oct. 4, 1888.	Diagnosis confirmed.		D.	Death on 14th day from general peritonitis. Autopsy revealed evidence pelvic Hem. probably caused by lacerature becoming loosened in some way.
11	Mrs. C. W.	Dr. Noble, Carlo, N. Y.	34	M.	Multilocular ovarian cyst.	Nov. 19, 1884.	Multilocular cyst, left ovary. Right healthy, not removed drainage for 48 hours.	R.	Uninterrupted recovery.	
12	Mrs. H. T. S.	Dr. Johnson, Belleayre, N. Y.	37	M.	Multilocular ovarian cyst.	Dec. 21, 1888.	Diagnosis confirmed. 12 qts. fluid.	R.	Uninterrupted recovery. Patient in good health, June, 1894.	
13	Mrs. H. M. R.	Dr. Kelley, Fair Haven, Vt.	29	M.	Salpingitis.	Dec. 22, 1888.	Uterine appendages.	R.	Good recovery. Patient had metrorrhagia for six months after operation; finally, complete recovery.	
14	Mrs. E. B.	Dr. Van der Veer, Albany, N. Y.	39	M.	Pelvic or psoas abscess.	Jan. 4, 1889.	Pysalpinx. Drainage.	R.	Drainage continued for over two weeks.	
15	Mrs. N. M.	Dr. Lake, Fair Haven, Vt.	26	M.	Tubercular peritonitis.	Jan. 5, 1889.	Right ovary and tube. Drainage.	R.	Mass removed proved on examination to be tubercular. Glass drainage gave much discomfort and 4th day replaced by rubber tube, this removed on 12th day.	
16	Miss J. R.	Dr. Du Bois, Albany, N. Y.	26	S.	Salpingitis. Pelvic peritonitis.	April 5, 1889.	Uterine appendages.	D.	Death from peritonitis on 11th day. Possibly obstruction.	
17	Mrs. M. E. H.	Dr. Wheeler, Chatham, N. Y.	45	M.	Multilocular ovarian cyst.	April 12, 1889.	Cyst and ovaries.	R.	Uninterrupted recovery.	
18	Mrs. E. C.		26	M.	Multilocular cyst, left ovary.	May 21, 1889.	Diagnosis confirmed. Right ovary in state cystic degeneration and removed. Drainage.	R.	Uninterrupted recovery.	
19	Mrs. F. W.	Dr. Van Vranen, Troy, N. Y.	49	M.	Unilocular cyst, left ovary.	June 15, 1889.	Multilocular cyst, left ovary. Drainage.	R.	Good recovery but patient suffered from hernia six months after operation.	
20	Miss B. A.	Dr. Maxon, Chatham, N. Y.	22	M.	Unilocular ovarian cyst.	Aug. 29, 1889.	Unilocular cyst left ovary also right ovary. Very adherent.	D.	Death from shock.	

NAME.	PHYSICIAN AND RESIDENCE.	AGE. CIVIL.	DIAGNOSIS OF DISEASE.	DATE OF OPERATION.	NATURE OF OPERATION. REMOVAL.	RESULT.	REMARKS.
21 Mrs. E. B.	Dr. Fuller, Huntsville, N. Y.	47 M.	Multilocular cyst, left ovary.	Sept. 23, 1889.	Cyst and uterine appendages. Colloid degeneration. Drainage.	R.	Uninterrupted recovery.
22 Mrs. C. L.	Dr. A. Boyce, E. Schoenbeck, N. Y.	63 M.	Multilocular ovarian cyst.	Oct. 14, 1889.	Diagnosis confirmed. Many adhesions. Drainage.	R.	Severe vomiting for 48 hours after operation. Drainage quite free. Excellent recovery.
23 Mrs. C. C.	Dr. Johnson, Champlion, N. Y.	59 M.	Unilocular cyst, right ovary.	Oct. 15, 1889.	Diagnosis confirmed.	R.	Uninterrupted recovery.
24 Mrs. M. B.	Dr. Layman, Middleburgh, N. Y.	47 M.	Unilocular cyst, left ovary.	Oct. 29, 1889.	Diagnosis confirmed.	R.	Uninterrupted recovery.
25 Mrs. R. H.	Dr. Babbitt, Coopers-town, N. Y.	36 M.	Pelvic peritonitis. Salpingitis.	Nov. 4, 1889.	Adhesions loosened but too severe for removal of appendages.	R.	Good recovery. Patient very much improved in health, one year after operation.
26 Mrs. R. A.	Dr. Best, Middleburgh N. Y.	35 M.	Unilocular cyst, left ovary.	Nov. 11, 1889.	Unilocular cyst, left ovary; also right ovary.	R.	Uneventful recovery.
27 Mrs. D. S.	Dr. Allen, Greenbush, N. Y.	37 M.	Supposed, large ovarian cyst.	Nov. 13, 1889.	Incision. Right ovary removed. Tubercular peritonitis.	R.	Error in diagnosis. Patient died later on of return of peritoneal dropsy.
28 Mrs. S. N. Montana.	Dr. St. John Middle, Brunswick, N. Y.	32 M.	Large unilocular cyst, right ovary.	Dec. 5, 1889.	Unilocular cyst, right ovary; also left ovary.	R.	Chill on 4th day controlled by quinine. Uninterrupted recovery followed.
29 Mrs. H. N.	Dr. Hall, W. Hartford, N. Y.	34 M.	Chronic ovaritis. Pelvic peritonitis.	Jan. 27, 1890.	Uterine appendages.	R.	Uneventful recovery.
30 Mrs. A. McK.	Dr. Turner, Mineville, N. Y.	20 M.	Chronic ovaritis.	Feb. 23, 1890.	Uterine appendages, cystic degeneration of ovaries. Many adhesions.	R.	Good recovery.

31 Mrs. E. H.	Dr. Dunlop, Waterford, N. Y.	Water-35 M. Multilocular ovary.	Multilocular cyst, left	April 20, 1890.	Diagnosis confirmed. Hard mass on right side not disturbed.	R.	Good recovery. Hernia observed one year after operation, not troublesome. Hard mass still observed 2 years, 6 months after operation, not enlarging. Ligature came away, July, 1890.
32 Mrs. J. V.	Dr. Traver, Troy, N. Y.	30 M.	Multilocular cyst, left ovary.	April 30, 1890.	Diagnosis confirmed. Drainage removed on seventh day.	R.	Excellent recovery, although long search had to be made, for sponge lost in cavity.
33 Miss A. O.	Dr. Pearson, Schenectady, N. Y.	30 S.	Chronic ovariitis. Dysmenorrhoea.	June 16, 1890.	Uterine appendages.	R.	Uninterrupted recovery.
34 Mrs. E. C.	Gray, N. Y.	34 M.	Unilocular ovarian cyst.	Sept. 20, 1890.	Multilocular cyst, right ovary. Parovarian cyst, left side.	R.	Uneventful recovery.
35 Miss L. McC.	Dr. Young, Glenville, N. Y.	23 S.	Chronic salpingitis. Left ovary cystic. Retroversion.	Oct. 7, 1890.	Right ovary and tube, March '89, had been to Seney hospital, N. Y., and Alexander's operation done by Dr. Pitcher.	R.	Recovery uninterrupted.
36 Miss M. G.	No. Easton, N. Y.	18 S.	Multilocular cyst, right ovary.	Oct. 10, 1890.	Diagnosis confirmed. Left ovary healthy, not removed.	R.	Good recovery. Apposition lower angle, wound not perfect, silk-worm gut. Exuberant granulations.
37 Mrs. E. W.		24 M.	Chronic salpingitis. Pelvic peritonitis.	Oct. 21, 1890.	Right ovary and tube. Left healthy.	R.	
38 Mrs. S. K.	Dr. Bissell, Troy, N. Y.	33 M.	Pyosalpinx double.	Oct. 30, 1890.	Uterine appendages and small fibroid fundus of uterus. Drainage.	R.	Free ham. from fundus uterus when fibroid removed, controlled by thermocautery. Ligature came away 8 weeks after operation. Recovery uneventful.
39 Mrs. F. M.	Dr. Matte, No. Adams, Mass.	35 M.	Ovaritis salpingitis.	Nov. 20, 1890.	Uterine appendages.	R.	Patient made a slow but good recovery.
40 Mr. J. E.	Dr. Kashan, Schenectady, N. Y.	26 M.	Ovaritis, right side.	Dec. 18, 1890.	Right ovary size turkey egg and tube.	R.	Quick recovery. Two years after patient became pregnant, passed through successfully, delivered of living child. Excellent health since.

NO.	NAME.	PHYSICIAN AND RESIDENCE.	AGE, CIVIL.	DIAGNOSIS OF DISEASE.	DATE OF OPERATION.	NATURE OF OPERATION. REMOVAL.	RESULT.	RESULT.
41	Miss E. K.	Dr. Van der Veer, Albany, N. Y.	33 S.	Unilocular ovarian cyst, probably left.	Jan. 3, 1891.	Unilocular cyst, left ovary and uterine appendages. Drainage.	R.	10th day lower end incision opened and from 4 to 6 ounces fetid pus discharged. Irrigation tract of drainage tube. Good recovery.
42	Miss M. G.	Little Falls, N. Y.	20 S.	Tubercular peritonitis. Left ovary enlarged.	Jan 14, 1891.	Left ovary and tube. Drainage.	R.	Good recovery. Patient in excellent health, June, 1894.
43	Miss J. S.	Dr. Van der Veer, Seward, N. Y.	19 S.	Unilocular cyst, left ovary.	Feb. 28, 1891.	Diagnosis confirmed. Right ovary, cyst and incised.	D.	Immediate haem. due to slipping of ligature, abdomen re-opened, pedicle re-ligated. Two pints saline solution poured into peritoneal cavity.
44	Mrs. A. E.	Albany, N. Y.	20 M.	Multilocular ovarian tumor.	March 3, 1891.	Mass from left side sarcoma, cyst from right ovary. Drainage.	R.	Patient did well. Able to do her work for more than a year. 2d operation; removal part of new growth. Lying June, 1894, with fistulous tract from which protruded sarcomatous mass.
45	Mrs. N. A.	Dr. Stickles, Philmont, N. Y.	30 M.	Hematosalpinx.	March 18, 1891.	Uterine appendages. Right side extra uterine pregnancy.	R.	Patient had regular menstrual flow for more than a year, then thoroughly currtetted cavity; uterus, packed with iodoform gauze when flow ceased and she has remained well since.
46	Mrs. M. S.	Dr. Rushson, Amsterdam, N. Y.	44 M.	Multilocular ovarian cyst.	April 23, 1891.	Multilocular cyst, left ovary. Right ovary undisturbed.	R.	Ligature came away nearly 6 months after operation; sinus readily healed. In good health August, 1894.
47	Mrs. E. C.	Dr. Babcock, Albany, N. Y.	33 M.	Chronic ovaritis.	May 4, 1891.	Uterine appendages. Extensive adhesions. Drainage.	R.	Good recovery. Hernia one year after operation.
48	Mrs. A. McC.	Dr. Webster, Schuylersville, N. Y.	32 M.	Chronic ovaritis and pyosalpinx. Specific.	May 22, 1891.	Uterine appendages.	R.	Good recovery from operation, but complained for over two years of old feeling; weakness about pelvis and pain in back.

49 Mrs. E. C.	Dr. Neher, Nassau, N. Y.	33 M.	Chronic ovaritis and pyosalpinx.	May 27, 1891.	Uterine appendages. Drainage.	R. Good recovery. Patient had undergone operation for lacerated cervix 3 months previously. Excellent health, Aug., 1894.
50 Mrs. E. B.	Dr. McHarg, Albany, N. Y.	28 M.	Multilocular ovarian cyst.	May 30, 1891.	Multilocular cyst and both ovaries. Drainage.	R. Excellent recovery.
51 Miss L. M.	Dr. Church, Oneonta, N. Y.	28 S.	Cystic degeneration ovaries and salpingitis.	July 13, 1891.	Uterine appendages.	R. Good recovery—somewhat slow. In excellent health, Aug., 1894.
52 Mrs. A. E. B.	Dr. Bigelow, Albany, N. Y.	42 M.	Multilocular ovarian cyst. Peritonitis.	Sept. 1, 1891.	Multilocular cyst, left ovary and right ovary. Cyst suppurating. Drainage.	R. Excellent recovery and in good health, June, 1894.
53 Mrs. M. M.	Dr. Filter, Troy, N. Y.	32 M.	Unilocular cyst, left ovary.	Oct. 1, 1891.	Left ovary, also hydrosalpinx, right side.	R. Good recovery. Patient in good health one year afterwards.
54 Mrs. V. S.	Dr. Nichols, Worcester, N. Y.	53 M.	Ovarian cyst, right side.	Oct. 6, 1891.	Unilocular cyst, right ovary. 6 qts. fluid.	R. Excellent recovery and in good health two years after operation.
55 Mrs. A. R.	Dr. Mambert, Rondout, N. Y.	55 M.	Multilocular ovarian cyst.	Oct. 6, 1891.	Suppurating cyst and both ovaries. Drainage.	R. Excellent recovery.
56 Mrs. N. P.	Dr. Lamont, Catskill, N. Y.	31 M.	Supposed suppurating ovary, right side.	Oct. 8, 1891.	Incision; great adhesions of intestines. Large abscess. Drainage.	R. One year after operation developed second abscess, producing septicaemia, from which she died.
57 Mrs. E. J. L.	Dr. Magee, Lansingburgh, N. Y.	30 M.	Unilocular ovarian cyst with peritonitis.	Oct. 15, 1891.	Cyst and both ovaries.	R. Good recovery. In excellent health two years after operation.
58 Miss I. R.	Dr. Salmon, Lansingburgh, N. Y.	19 S.	Chronic ovaritis Dysmenorrhoea.	Oct. 19, 1891.	Uterine appendages. Atrophy of both ovaries.	R. Very good recovery but died one year after from cancer in stomach, vomiting almost continually for 3 months previous to death.
59 Miss L. L. McC.	E. Glenville, N. Y.	24 S.	Cyst of left ovary.	Nov. 9, 1891.	Cyst left ovary like small orange.	R. Second operation. (See case 35). Patient in excellent health, Aug., 1894.
60 Miss K. E. M.	Dr. Bigelow, Albany, N. Y.	23 S.	Unilocular ovarian cyst.	Nov. 24, 1891.	Unilocular cyst, left ovary. Right ovary cystic and removed.	R. Excellent recovery.

NAME.	PHYSICIAN AND RESIDENCE.	AGE. CIVIL CONDITION.	DIAGNOSIS OF DISEASE.	DATE OF OPERATION.	NATURE OF OPERATION. REMOVAL.	RESULT.	REMARKS.
61 Mrs. M. J. V.	Dr. Gray, Cambridge, N. Y.	40 M.	Unilocular ovarian cyst.	Dec. 7, 1891.	Unilocular cyst, left ovary.	R.	Excellent recovery.
62 Mrs. L. M. K.	Dr. Van der Veer, Albany, N. Y.		Cystic degeneration ovaries. Pelvic peritonitis salpingitis.	Dec. 7, 1891.	Uterine appendages.	R.	Excellent recovery.
63 Mrs. M. B. M.	Dr. Pond, Proctor, Vt.	33 M.	Pelvic peritonitis. Hysterosalpinx.	Dec. 14, 1891.	Uterine appendages. Many adhesions. Atrophy both ovaries. Drainage.	R.	Excellent recovery. Patient relieved promptly from all sufferings. November and December, 1893, quite a flow each month. Excellent health since, last seen, May, 1894.
64 Mrs. F. E. D.	Dr. Sheffield, Masonville, N. Y.	27 M.	Pyosalpinx.	Jan. 2, 1892.	Uterine appendages. Tubes large and filled with pus. Drainage.	R.	Excellent recovery.
65 Mrs. S. B.	Dr. Edwards, Gloversville, N. Y.	30 M.	Unilocular ovarian cyst, possibly tubercular peritonitis.	Jan. 28, 1892.	Right tube and ovary. Tubercular peritonitis. Drainage.	R.	Good recovery.
66 Mrs. M. K.	Dr. Simons, Conajoharie, N. Y.	27 M.	Unilocular ovarian cyst.	Feb. 2, 1892.	Unilocular cyst, left ovary. Also right ovary. Dermoid. Drainage.	D.	Broad pedicle. Immediate hemorrhage from retraction vessels before abdominal incision closed. Vessels tied separately. At end 48 hours, from condition, pulse and symptoms, possible internal hemorrhage. Wound re-opened. Only 1 oz. blood in pelvic cavity. Drainage. Death sixth day from exhaustion.
67 Mrs. I. H.	Dr. Infield, Sandy Hill, N. Y.	56 M.	Multilocular ovarian cyst.	Feb. 12, 1892.	Cyst, right ovary. Slight adhesions.	R.	Good recovery. In excellent health, May, 1894.
68 Mrs. M. A. D.	Dr. Still, Johnstown, N. Y.	26 M.	Salpingitis. Hystero-epilepsy.	March 5, 1892.	Uterine appendages.	R.	Menstruated nearly every month since operation. Better for some time of epileptic seizures, but September, 1894, quite as bad as ever.

60	Mrs. F. S.	Dr. Gray, Greenwich, 35 M.	Tubercular peritonitis.	March 9, 1892.	Uterine appendages. Drainage.	R.	Patient in excellent health, May, 1894.
70	Miss B. C.	Dr. Holdridge, Niagara, 16 S.	Tubercular peritonitis.	April 8, 1892.	Uterine appendages. Drainage.	R.	Patient died 3 months after operation. From all symptoms general tuberculosis.
71	Mrs. A. B.	Dr. Milbank, Greenbush, N. Y.	Tubercular peritonitis.	May 2, 1892.	Incision, cocaine. Ovaries studded with tubercles; also peritoneum. Drainage.	R.	Patient in excellent health, May, 1894.
72	Mrs. A. H.	Dr. Nichols, Sand Lake, N. Y.	Ovarian cyst, peritonitis.	May 26, 1892.	Cyst, right ovary; numerous adhesions. Ligated; drainage.	R.	Good recovery. Patient in good health one year after operation.
73	Mrs. L. G.	Dr. Papan, Albany, N. Y.	Multilocular ovarian cyst.	May 29, 1892.	Cyst of right ovary and tube; many adhesions. Hydromepinx. Left tube and ovary removed. Drainage 30 day.	D.	Suffered from diabetes for 2 years. At time of operation passed urine containing 9 grains sugar to oz. Died comatose 3d day.
74	Mrs. I. L.	Dr. Haynes, Cohoes, N. Y.	Unilocular ovarian cyst.	June 15, 1892.	Cyst, left side; right ovary healthy. 3 quarts fluid. Drainage.	R.	Excellent recovery and in good health, June, 1894.
75	Mrs. M. D.	Dr. Hannan.	Ovarian cyst.	Aug. 30, 1892.	Diagnosis confirmed.	R.	Uninterrupted recovery.
76	Mrs. L. C. B.	Dr. Wilson, Schodack, N. Y.	Multilocular ovarian cyst.	Sep. 30, 1892.	Cyst, right ovary. Left ovary not disturbed. Some adhesions. 8 quarts fluid. Drainage.	R.	Good recovery. Patient alive, June, 1894.
77	Mrs. H. G.	Dr. Geel, Berlin, N. Y.	Double pyosalpinx, specimen.	Oct. 10, 1892.	Uterine appendages. Very tedious operation; many adhesions. Drainage.	D.	Death on 6th day from exhaustion.
78	Mrs. M. A. A.	Dr. Knapp, Forest City, Pa.	Double pyosalpinx and tubercular peritonitis.	Oct. 14, 1892.	Uterine appendages. Drainage.	R.	Good recovery. Patient writes May, 1893, seldom had such good health as then enjoying.
79	Miss A. A.	Dr. Kellogg, Flatburgh, N. Y.	Double pyosalpinx, chronic ovaries.	Oct. 30, 1892.	Diagnosis confirmed. Uterine appendages.	R.	Good recovery. Much improved in health, December, 1893.

No.	NAME.	PHYSICIAN AND RESIDENCE.	AGE. CIVIC CONDITION.	DIAGNOSIS OF DISEASE.	DATE OF OPERATION.	NATURE OF OPERATION. REMOVAL.	RECOVER.	REMARKS.
80	Miss E. W.	Dr. Scully, Rome, N. Y.	24 S.	Multilocular ovarian cyst, peritonitis.	Nov. 1, 1892	Cyst, right ovary. Some adhesions.	D.	Death on 5th day, due to intestinal obstruction.
81	Miss E. W.	Dr. Taylor, Bainbridge N. Y.	16 S.	Multilocular ovarian cyst.	Nov. 3, 1892	Diagnosis confirmed.	R.	Recovery on about 16th day.
82	Miss C. L. L.	Dr. Kinstern and Stover, Amsterdam, N. Y.	40 S.	Double pyosalpinx.	Nov. 29, 1892	Diagnosis confirmed. Uterine appendages.	R.	Excellent recovery.
83	Mrs. K. O.	Dr. Johnson.	37 M.	Unilocular ovarian cyst.	Dec. 1, 1892	Diagnosis confirmed.	R.	Good recovery.
84	Mrs. E. G.	Dr. Carty, No. Granville, N. Y.	37 M.	Ovarian cyst and pyosalpinx.	Jan. 16, 1893	Cyst and uterine appendages.	R.	Excellent recovery.
85	Miss F. W.	Dr. Lough, Edmeston, N. Y.	19 S.	Unilocular cyst, right ovary.	Jan. 18, 1893	Diagnosis confirmed. Left ovary healthy. Not disturbed.	R.	Excellent recovery. In good health, Sept., 1894.
86	Mrs. M. B.	Dr. Pape, Albany, N. Y.	40 M.	Multilocular ovarian cyst and suspected pregnancy.	Jan. 18, 1893	Multilocular cyst, right ovary. Pregnancy 4 months. 27 pints fluid.	D.	Patient's history very interesting. Tapped twice. Aborted 48 hours after operation. Death from exhaustion on 5th day.
87	Mrs. F. K.	Dr. Phillips, Gloversville, N. Y.	30 M.	Cyst, left ovary.	Jan. 23, 1893	Unilocular cyst, each ovary. 9 pints fluid.	R.	Excellent recovery. Good health, June, 1894.
88	Mrs. A. W. K.	Dr. Gorham, Albany, N. Y.	67 M.	Multilocular ovarian cyst. Recent peritonitis.	Feb. 2, 1893	Cyst right ovary. Left ovary and tube normal. Slight adhesions. 25 pints fluid. Drainage.	R.	Excellent recovery. In good health, Sept., 1894. Looks ten years younger than before operation.
89	Mrs. D. S.	Dr. Brownell, Oneonta, N. Y.	34 M.	Double pyosalpinx. Specific probably. Several attacks pelvic peritonitis	Feb. 11, 1893	Uterine appendages. Very serious adhesions.	D.	Operation long and tedious. Death from exhaustion on 3d day.

90	Mrs. E. D.	Dr. Brownell, Oneonta, N. Y.	23 M.	Double pyosalpinx.	Feb. 13, 1883.	Uterine appendages.	R.	Good recovery, though at times suffered from pelvic pain and had some flow for few months following operation.
91	Mrs. A. W.	Dr. Hall, Adamsville, N. Y.	24 M.	Left ovary diseased. Dysmenorrhea, etc.	Feb. 16, 1883	Uterine appendages. Left ovary, prolapsed and developing cyst. Right cirrhotic stenosis of tube.	R.	Good recovery. In excellent health, June, 1884.
92	Mrs. K. W.	Dr. Magee, Lansingburgh, N. Y.	25 M.	Pelvic peritonitis Pyosalpinx double.	Mar. 18, 1883.	Uterine appendages. Cystic degeneration of ovaries. Firm adhesions.	R.	Not a rapid recovery, but ultimately improved and presents the best appearance of health. June, 1884.
93	Mrs. S.	Dr. Lincoln and Dr. Hodgman, Milton, N. Y.	27 M.	Pyosalpinx puerperal.	April 19, 1883.	Right ovary.	D.	Operation following confinement 12 days previously. Septic condition. Uterus curetted twice. Chills, etc., not controlled. Death 4th day.
94	Miss J. K.	Dr. Ross, Whiting, Vt.	15 S.	Tubercular peritonitis.	May 2, 1883.	Incision. Drainage.	R.	Excellent recovery.
95	Mrs. P. D.	Dr. Johnson, Ashland, N. Y.	40 M.	Ovarian Cyst.	May 4, 1883.	Unilocular cyst, left ovary.	R.	Uninterrupted recovery.
96	Mrs. E. P.	Dr. Fritts, Hudson, N. Y.	50 M.	Cyst, right ovary.	May 16, 1888.	Unilocular cyst, right ovary.	R.	Quick recovery. Second operation Dr. T. G. Thomas removed cyst, left ovary, 1879.
97	Mrs. I. P.	Dr. Rider, Burdick's Bridge, N. Y.		Multilocular ovarian cyst. Peritonitis. Possible suppurative and pregnancy.	July 24, 1883.	Multilocular cyst, right ovary. Slight adhesions scant. 3 months pregnant.	R.	Good recovery followed by normal confinement at full time. In excellent health, June, 1884.
98	Mrs. M. F.	Dr. Archambeault and Morrow, Cohoes, N. Y.	32 M.	Tubercular peritonitis.	Sept. 7, 1883.	Diagnosis confirmed. Drainage.	R.	Good recovery. In excellent health 6 months later.
99	Miss M. S.		38 S.	Unilocular cyst, right ovary.	Sept. 8, 1883.	Diagnosis confirmed. Pyosalpinx; left tube removed with ovary.	R.	Excellent recovery.
100	Mrs. E. G. D.	Dr. Pond, Rutland, Vt.	27 M.	Extra uterine pregnancy, right side.	Sept. 17, 1883.	Extra uterine pregnancy, right side, with tube and ovary. Pyosalpinx, left ovary and tube removed. Drainage.	R.	Rapid recovery.

NAME.	PHYSICIAN AND RESIDENCE.	AGE. CIVIL CONDITION.	DIAGNOSIS OF DISEASE.	DATE OF OPERATION.	NATURE OF OPERATION. REMOVAL.	RESULT.	REMARKS.
101 Mrs. E. W.	Dr. Stover, Albany, N. Y.	29 M.	Double pyosalpinx, probably specific.	Sept. 21, 1883.	Uterine appendages.	R.	Good recovery. Patent doing well, June, 1884.
102 Mrs. J. C. D.	Drs. Keegan and Hendee, Albany, N. Y.	28 M.	Extra uterine pregnancy.	Sept. 21, 1883.	Four months fetus and placenta. Many clots, right side.	D.	Death from shock in 12 hours.
103 Miss G. T.	Dr. Smith, Poultney, Vt.	18 S.	Tubercular peritonitis.	Sept. 22, 1883.	Uterine appendages. Ovaries and tubes studded with tubercular masses. Tubes thickened. Drainage.	R.	Excellent recovery.
104 Mrs. M. V.	Dr. Easton, Van Hornesville, N. Y.	52 M.	Multilocular cyst, right ovary.	Sept. 23, 1883.	Diagnosis confirmed. Some adhesions. Left ovary healthy. Not removed. 7 qts. fluid.	R.	Splendid recovery.
105 Mrs. E. M.	Dr. Ullman, Albany, N. Y.	54 M.	Multilocular cyst, right ovary. Peritonitis.	Sept. 26, 1883.	Diagnosis confirmed. Firm adhesions, one spot. Left ovary normal, not disturbed. 10 qts. fluid.	R.	Excellent recovery. In good health, August, 1884.
106 Mrs. I. A.	Dr. Riley, Adams, N. Y.	27 M.	Multilocular ovarian cyst.	Sept. 28, 1883.	Multilocular cyst, left ovary, also right ovary and tube. 14 qts. fluid.	R.	Rapid and excellent recovery.
107 Miss E.	Dr. Gray, Greenwich, N. Y.	20 S.	Ovarian abscess. Pyosalpinx double.	Oct. 4, 1883.	Uterine appendages.	R.	Good recovery. Fairly encouraging result. Private hospital.
108 Mrs. M. S.	Dr. Kinghorn, Amsterdam, N. Y.	27 M.	Double pyosalpinx.	Oct. 7, 1883.	Uterine appendages. Tubes very much thickened and filled with pus. Drainage.	R.	Good recovery. Patient obliged to go to work at once, September, 1884, presented with threatened hernia.
109 Miss M. E.	Dr. Bigelow, Albany, N. Y.	30 S.	Multilocular cyst, right ovary.	Oct. 12, 1883.	Diagnosis confirmed. No adhesions. Left ovary senile, not disturbed.	R.	Excellent recovery.
110 Mrs. J. M.	Dr. Mead, Jerusalem, N. Y.	40 M.	Double pyosalpinx. Abscess.	Oct. 12, 1883.	Uterine appendages.	R.	Slow but gradual recovery. Patient very neurasthenic.

111	Mrs. L. de L.	Dr. Willard, Watertown, N. Y.	45 M.	Diseased left ovary. Very painful. Double pyosalpinx.	Oct. 15, 1893.	Diagnosis confirmed. Uterine appendages.	R.	Recovery retarded. September 1894. Relieved of all pelvic pain but still confined to bed more or less.
112	Mrs. H. M.	Dr. Roseman, Anoraim, N. Y.	36 M.	Double ovarian cyst and uterine fibroid.	Oct. 21, 1893.	Diagnosis confirmed. Supravaginal hysterectomy. Ligatures. Drainage.	R.	Excellent recovery.
113	Mrs. J. S.		37 M.	Cyst, left ovary.	Oct. 21, 1893.	Large cyst right ovary, also left ovary for cystic degeneration.	R	Good recovery.
114	Miss M. N.	Dr. Vander Veer, Troy, N. Y.	31 S.	Multilocular ovarian cyst.	Oct. 30, 1893.	Double multilocular ovarian cyst. Uterine fibroid supravaginal hysterectomy. Tait clamp. 5 qts. fluid.	R.	Good recovery.
115	Mrs. N. C. P.	Dr. Wheeler, Chatham, N. Y.	23 M.	Probably sarcoma, left broad ligament.	Nov. 2, 1893.	Multilocular cyst, left ovary. Right ovary cirrhotic and removed with tube.	R.	Good recovery. In good health, June 1894.
116	Mrs. S. H.	Dr. Niver, Hillsdale, N. Y.	26 M.	Double pyosalpinx.	Nov. 2, 1893.	Diagnosis confirmed. Uterine appendages.	D.	Patient did nicely. Wound healed; began to sit up on 21st day; 22d day symptoms obstruction presented. Unable to relieve and died on 27th day.
117	Mrs. R. C.	Dr. H. H. Smith, Hudson, N. Y.	46 M.	Tubercular peritonitis.	Nov. 2, 1893.	Incision, drainage. Diagnosis confirmed. 12 qts. fluid.	R.	Good recovery.
118	Mrs. E. McC.	Dr. Reynolds, Saratoga, N. Y.	34 M.	Pelvic peritonitis. Dysmenorrhea.	Nov. 16, 1893.	Uterine appendages. Firm adhesions.	R.	Excellent recovery.
119	Miss K.	Dr. Chambers, Kingston, N. Y.	30 S.	Old general and pelvic peritonitis. Drainage. Rheal. Hysterio-epilepsy.	Nov. 29, 1893.	Right ovary and tube like intestine. Many and very firm adhesions. Left ovary and tube could not be found.	R.	Good recovery. Patient very much better until May 1894, when severe convulsive seizures, flowing coming on 17 months in succession at this time.
120	Mrs. H. W.	Dr. Knapp, Forest City, Pa.	28 M.	Pelvic peritonitis.	Nov. 30, 1893.	Uterine appendages. Cystic degeneration ovaries. Firm adhesions.	R	Good recovery. In excellent health 8 months later.
121	Miss E. L. H.	Dr. Van der Veer, Troy, N. Y.	32 S.	Unilocular ovarian cyst.	Dec. 7, 1893.	Multilocular cyst, left ovary. Right ovary for atrophy. Fluid 10 qts. Cyst 15 oz.	R.	Excellent recovery.

No.	NAME.	PHYSICIAN AND RESIDENCE.	AGE. CIVIL.	DIAGNOSIS OF DISEASE.	DATE OF OPERATION.	NATURE OF OPERATION. REMOVAL.	RESULT.	REMARKS.
122	Miss S.	Dr. Cook, Albany, N. Y.	28 S.	Double pyosalpinx. Uterine fluid.	Dec. 7, 1893.	Diagnosis confirmed. Uterine appendages.	R.	Excellent recovery. Patient in good health. June, 1894.
123	Mrs. E. M. C.	Dr. Ross, Poughkeepsie, N. Y.	27 M.	Pelvic peritonitis. Double pyosalpinx.	Dec. 15, 1893.	Uterine appendages. Very firm adhesions.	D.	Death from shock.
124	Mrs. M. S.	Dr. Van Slyke, Coxsack, N. Y.	71 M.	Multilocular ovarian cyst.	Dec. 18, 1893.	Multilocular cyst, right ovary. 16 qts. fluid. Cyst 3 lbs.	D.	Patient recently suffered from grippe. Death from pulmonary infarction.
125	Mrs. P. S.	Dr. Crosby, E. Nassau, N. Y.	27 M.	Unilocular ovarian cyst.	Dec. 21, 1893.	Unilocular cyst, right ovary; also left ovary. Cystic enlargement.	R.	Good recovery.
126	Miss H. V.	Dr. Papen, Oneonta, N. Y.	19 S.	Multilocular ovarian cyst. Acute peritonitis.	Jan. 2, 1894.	Cystic papillomatous mult. cyst, left ovary. Right ovary cystic. Firm adhesions. Drainage. Removed second day 11 qts. fluid.	R.	Patient made good recovery. Returned in August with marked growth, left side pelvis, probably nature, true sarcoma. No further operation done.
127	Mrs. E. F. S.	Dr. Sablin, W. Troy, N. Y.	42 M.	Pelvic peritonitis. Double pyosalpinx.	Feb. 22, 1894.	Uterine appendages. Many and firm adhesions. Drainage.	R.	Good recovery.
128	Miss J. D.	Dr. Johnston, Amsterdam, N. Y.	26 S.	Supposed disease of ovaries, causing sympathetic vomiting.	Feb. 23, 1894.	Section, ovaries and tubes, healthy; not removed. Some adhesions loosened and tubes straightened.	R.	Slow but excellent recovery.
129	Miss A. E.	Dr. Millington, Argyle, N. Y.	28 S.	Pelvic peritonitis. Dysmenorrhoea.	Feb. 24, 1894.	Uterine appendages. Many adhesions.	R.	Excellent recovery.
130	Miss M. D.	Mrs. Stover and Kinkern, Amsterdam, N. Y.	22 S.	Pelvic peritonitis and enlarged ovaries.	Feb. 27, 1894.	Uterine appendages. Cystic enlargement both ovaries.	R.	Good recovery.
131	Mrs. N. J. O.	Mrs. Babcock and Pomeroy, Springfield, N. Y.	23 M.	Diagnosis doubtful as to nature cyst.	March 1, 1894.	Multilocular cyst, left ovary. Right ovary enlarged with pyosalpinx. Many adhesions.	R.	Good recovery. Patient on returning home had much pain, relapsing into former morphine habit.

132 Miss S. N.	Dr. McCulloch, Gloversville, N. Y.	29 S.	Pelvic peritonitis. Chronic disease left ovary. Severe dysmenorrhœa.	March 19, 1894.	Uterine appendages. Many adhesions.	Many adhesions.	R.	Excellent recovery.
133 Mrs. L. D.	Dr. Johnson, Amsterdam, N. Y.	29 M.	Double pyosalpinx.	March 23, 1894	Uterine appendages.		R.	Excellent recovery.
134 Miss J. McC.	Dr. Mosher, Granville, N. Y.	27 S.	Double pyosalpinx.	March 30, 1894.	Uterine appendages. Many adhesions.		R.	Excellent recovery
135 Mrs. H. A. L.	Dr. Nichols, Sand Lake, N. Y.	43 M.	Pelvic peritonitis retroversion. Diseased ovaries.	March 30, 1894.	Uterine appendages. Many, very firm adhesions.		D.	Death from peritonitis. Patient very stubborn and hard to manage.
136 Miss J. K.	Dr. Lee, Canaan, Conn.	33 S.	Hystero epilepsy. Chronic ovaritis.	April 16, 1894.	Uterine appendages. Not difficult.		R.	Speedy recovery. At end of third month no return of epileptic seizures.
137 Mrs. M. S.	Dr. Shaw, Hoosick Falls, N. Y.	25 M.	Double pyosalpinx. Enlarged ovaries.	April 17, 1894.	Uterine appendages. Many adhesions. 7 qts. fluid.		R.	Excellent recovery.
138 Miss L. S.	Dr. Garneey, Kinderhook, N. Y.	31 S.	Double pyosalpinx. Enlarged ovaries. Possibly tubercular appendicitis.	April 23, 1894.	Uterine appendages and appendix. Few adhesions.		R.	Excellent recovery.
139 Mrs. F. F.	Dr. Melick, Sandy Hill, N. Y.	36 M.	Double pyosalpinx. Pelvic peritonitis.	April 30, 1894.	Uterine appendages. Few adhesions.		R.	Good result. Patient improved very markedly 3 months after operation.
140 Mrs. E. V.	Dr. Starks, Chatham, N. Y.	30 M.	Small interstitial fibroid uterus. Dysmenorrhœa.	May 12, 1894.	Uterine appendages.		R	Good recovery. No return of flow. Aug. 24, 1894, patient improved very decidedly.
141 Miss E. M. K.	Dr. Seymour, Troy, N. Y.	34 S.	Ovarian cyst.	May 24, 1894.	Double ovarian dermoid cysts. Few adhesions.		R.	Spendid recovery.
142 Mrs. L. D.	Dr. Faust, Schenectady, N. Y.	30 M.	Double pyosalpinx. Chronic peritonitis.	May 29, 1894.	Uterine appendages.		R.	Excellent recovery.
143 Mrs. A. G. W.	Drs. Reed and Church, Oneonta, N. Y.	29 M.	Double pyosalpinx.	May 30, 1894.	Uterine appendages.		R.	Good recovery. Patient doing finely when leaving private hospital.

N ^o	NAME.	PHYSICIAN AND RES- DENCE.	AGE CIVIL CONDITION.	DIAGNOSIS OF DISEASE.	DATE OF OPERATION.	NATURE OF OPERATION. REMOVAL.	RESULT.	REMARKS.
144	Miss M. C. F.	Dr. Henan, Albany, N. Y.	27 S.	Unilocular ovarian cyst.	June 6, 1894.	Unilocular cyst, left ovary.	R.	Excellent result. Patient had im- proved in health, Sept. 10, 1894, look- ing very much better.
145	Mrs. A. McN.	Dr. Bissell Troy, N. Y.	40 M.	Unilocular ovarian cyst.	June 16, 1894.	Unilocular cyst, left ovary. Short, broad pedicle. Hemorrhage.	R.	First ligature slipped requiring three additional ones. Pedicle then brought up and attached to lower end incision. Second week portion sloughed, pedicle came away. Some phlebitis of left leg. Otherwise ex- cellent recovery.

The Relations of Renal Insufficiency to Operations.¹

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cologist Erie County, Hospital.*

During my entire experience in the practice of medicine, I have been much interested in the relations of excretion to health and disease. During my experience as an operator this interest has been enhanced by observing the results of operations as dependent on the patient's general bodily condition. So-called vitality is really the resistance which the system offers to disease, and depends entirely upon the healthy condition of each organ which has to do with building up the tissues and getting rid of tissue waste. Of all of the bodily functions in this relation none holds quite so important a place as the condition and working power of the kidneys.

Gynæcologists have done more in the past two years to develop this subject than have the general surgeons. Very few have written on this subject. There is nothing in the standard text-books about it.

Dr. Coë,² in his first paper on this subject states that "inquiries addressed to a number of prominent operators showed that some regarded

albuminaria as a positive contraindication to operation, others as of no significance and others never examined the patient's urine at all."

To deny a patient operation because she has albuminaria, simply, is wrong; to say that the albuminaria she has may not be of significance without further investigation is wrong; to disregard the character of her excretions if she is to undergo an operation is wrong. Each of these attitudes is a gross injustice to the patient. In this connection there are many factors to consider, and a chance for the exercise of much discretion, before a conclusion can be reached which will be doing justice to the patient as well as to the operator.

Observations have been going on for several years and now there are enough data upon which to formulate a concise opinion as to the relations which exist between renal insufficiency and operations and the role that anæsthetics play in the results.

I wish to occupy your attention for a brief statement of some conclusions which I have drawn from observations of nearly three hundred operations at the Buffalo Woman's Hospital and at the same time supplement them with

1. Read before the American Association of Obstetricians and Gynæcologists. Toronto, Sept. 19th, 1894.

2. Contra-indication to laparotomy, etc.

those of gentlemen who have either written upon this subject or with whom I have had correspondence concerning their experiences and opinions.

By the term renal insufficiency I desire to be understood as meaning any state or condition of the urine showing deficient elimination of waste products whether from functional inactivity or from lesions of the kidneys.

If the question be asked whether renal insufficiency is a contra-indication to operation, the answer must be determined by the consideration of three factors: 1. The amount and nature of the renal insufficiency; 2. The character of the lesions for which operation is proposed; 3. The causal relation which the patient's disease holds to the renal insufficiency.

On admission to the hospital, my custom is to have the patient's urine collected for 24 hours. If she be menstruating or has an abundant muco-purulent discharge, albumen will surely be found. To avoid this source of error she is catheterized. The 24 hour sample is measured, reaction and specific gravity taken, then examined for albumen and sugar. If there be albumen, a low specific gravity in proportion to the amount voided, or if there be sediments, it is examined microscopically. If there be a suspicion of renal lesions the urea is determined quantitatively. The presence of albumen pus and blood in the urine may be accounted for by cystitis, ureteritis or pyelitis, but the quantity and specific gravity will not be affected, and casts will be absent.

The principal facts to ascertain are, whether the quantity of urea and solids excreted in 24 hours is below normal, and if so whether there are tube casts or other evidences that the deficiency is dependent on true renal lesions. Therefore the 24 hour sample is absolutely necessary for every examination of urine, which is to carry with it solid facts upon which to base an estimate of the working power of the kidneys.

The question is not the presence of albumen, hyaline, or a few granular casts, but are the kidneys crippled. The mere presence of albumen and hyaline casts in the urine, unless there be deficient excretion, therefore portends no evil. They are often transient.

Some gynecological patients on entrance are found to be voiding as low as eight or ten ounces daily, and that not of high specific gravity. Women with chronic endometritis especially are liable to this. Such women do not take much fluid. I do not operate till I have given them some preparation, which consists in taking water freely and keeping the bowels and skin free. In a few days they pass much larger quantities of urine of better specific gravity. These are not good subjects for prolonged anæsthesia without this preliminary preparation.

If the quantity of urine is above twenty ounces per day, of specific gravity 1,015 to 1,018, the quantity of urea not more than 25 per cent. below normal, even if there be albumen, hyaline, or a few granular casts, my experience is ably seconded by

my correspondents that there exists no real contra-indication to a necessary operation.

The knowledge of this condition renders it possible for the operator to take extra precautions to avoid too prolonged anæsthesia by doing a rapid operation and thus saving a life when it might be sacrificed if ignorant of the true conditions.

Another point of importance is, that an operator may be lead to do an operation at an earlier date because the condition of the kidneys shows beginning disease, which may have for its cause some obstruction to the ureters in the pelvis, thus forecasting what might be in the future much more serious renal trouble. Hence discovery of beginning renal disease may lead the operator to advise immediate operation for growths which otherwise might show no urgent reasons for removal.

If the quantity of urine be persistently small, twelve to fifteen ounces, of low specific gravity, a much decreased elimination of urea, whether there be much albumen and tube casts or not, it is more than questionable whether operation should be done for a condition which is less serious than the kidney disease itself.

A plastic operation, a section for inflammatory disease of the pelvis without pus would hardly be justifiable in such conditions of the kidneys. However if there were pus in the pelvis or a large tumor producing these pressure symptoms an operation would be justifiable.

Often the renal condition is the result of the chronic invalidism and

systemic infection incident to pus collections in the pelvis. Remove the cause and if the patient survives the operation she may entirely recover. The operator is justified in taking larger chances in puriform disease of the pelvis than in any other condition except large tumors. Sometimes the renal symptoms are serious, due to increased intra-abdominal pressure by a large tumor in which event the prompt removal of the growth is the most rational and certain way to relieve the renal symptoms. Such cases are an exact parallel to those we see in pregnancy, when by delivering we relieve the pressure, the kidney activity is resumed and the patient recovers.

There are cases of extreme gravity, such as ruptured ectopic pregnancy, where the patient is in great immediate danger. In such renal condition can not be considered. Operation is imperative.

Contracted kidney (chronic interstitial nephritis) is the most commonly fatal lesion after or at operation. It is also the most liable to be overlooked. It is difficult to diagnose. The quantity of urine found is so frequently deceiving by its abundance. There may be no albumen or perchance a trace. Microscopical examination may fail to discover a cast. At times they may be found. One condition is usually common, the extremely low specific gravity.

If, after repeated examination the urine continues to present these characters it is not safe to operate. I have twice refused operation under such circumstances, and the patient died soon from the kidney disease.

Nearly every operator whom I have met or have corresponded with has had deaths from contracted kidney, after operation.

It is the general observation of operators that their patients pass less urine than normal for several days after operation not only after abdominal section but after plastic operations. To a certain extent this may be accounted for after sections by the smaller quantity of fluids ingested for the first twenty-four or forty-eight hours. I do not believe however that this entirely explains the almost total suppression which at times occurs and sometimes endures to an alarming degree before secretion again begins. I believe that the anæsthetic is one factor in this production and that shock especially in abdominal sections, is the other and larger one. The functional power of the stomach is abolished, intestinal peristalsis is inhibited and there is present that intense peritoneal thirst, all showing shock to the solar plexus and other sympathetic nerve centres.

In suppression or partial suppression following operation drugs are of no avail. Water by stomach or if vomiting, by the bowel, together with cups over the kidney, steam baths or the hot pack accomplish the restoration of renal activity if it can be reëstablished. Real suppression I do not believe can be overcome.

Does renal insufficiency render the patient more liable to shock or slower convalescence?

There can be no question that shock occurs most frequently in women having renal lesions, because of

their lower vitality and power of resistance. That the convalescence is retarded seems reasonable from the fact that the recovery especially after a major operation depends so much upon the rapidity with which effete products are excreted.

The danger of operating on all patients with chronic lesions of the kidney is the occurrence after operation of acute congestion. This may even occur and often does occur to a marked degree in patients who have no well marked disease of the kidney previous to operation. There may develop *de novo* after operation congestion, acute pyelitis, or interstitial nephritis. Dr. Coe has observed acute congestion so intense as to result in punctate hæmorrhages.

Dr. Geo. B. Wood, of Philadelphia, has recently made a valuable series of experiments on dogs, some having healthy and others having diseased kidneys. He found that ether exists in a free state in the blood during and for some time after inhalation. Ether is not excreted by the kidneys to an appreciable amount; the kidneys of healthy dogs become congested, and on microscopical examination the cells show cloudy swelling. The cells of the convoluted tubules are primarily affected, the tufts and collecting tubules only evincing change when the anæsthesia had been prolonged. Repeated administrations of ether, if kept up long enough, would probably cause desquamation of the epithelial cells. In cases where uræmic poisoning was beginning to make itself apparent, it was shown that there existed a liability to sudden

death during ether narcosis, due to the action of ether on the already depressed centres of respiration.

Dr. Russell has shown in observations of 200 gynæcological operations, at the John Hopkins Hospital, that albumen appears in a large number of cases for the first three days after operation, in whom no albumen was found previous to operation. There were 10 per cent. more who had albumen after than before operation, and thirteen cases had hyaline casts and five had granular casts who did not have them before operation. This shows the marked effect that anaesthesia and operation has upon the kidneys.

Wunderlich (centralblatt for chirurgie) reports on the examination of 100 cases of ether and chloroform narcosis. The urine was examined chemically and microscopically before and after operation.

He reports that all cases taking ether, in whom albumen is present before operation, the amount of albumen is greatly increased.

He seldom found albumen or casts appeared after ether when none had existed before. In conclusion he says the so-called "ether nephritis," may be excluded from medical literature.

His observations on the effect of chloroform are that albumen and casts are frequently seen in the urine after its inhalation, usually disappearing in from twenty-four to forty-eight hours.

He believes that both ether and chloroform produce an ischaemia of the kidney or an increase in blood

pressure, thus accounting for the casts and albumen.

Rindskopf (centralblatt for chirurgie) reports 93 observations on chloroform narcosis. In 31 cases, exactly 33 1-3 per cent. albumen, casts, leucocytes and epithelial cells were found in the urine. In the majority of the cases the urine cleared up after seventy-two hours. The quantity of chloroform given influences the character of the urine. No case should be chloroformed every three or four days, as the kidneys will not have had time to recover.

There is prevalent among a large majority of our best operators a belief, which has been freely expressed to me in correspondence that chloroform is the safer anaesthetic in renal insufficiencies. Yet many of them have reported deaths from suppression of urine or uræmia after its administration. The deaths from chloroform seem to be quite as frequent as after ether narcosis.

It is interesting to note that Wunderlich ascribes to chloroform more irritating properties as far as the kidneys are concerned than he does to ether.

A few gentlemen with whom I have corresponded still give their allegiance to ether because they say its after effects are no worse than chloroform and that it is safer during the period of administration.

It does not seem that clinical experience, as deduced from the observers whom I have quoted, carries out the widely extant impression that ether is contra-indicated in renal lesions or insufficiencies.

From the foregoing I would deduce the following conclusions:

1. Every patient's urine should be examined quantitatively and qualitatively before operation if possible.

2. Minor degrees of renal insufficiency and minor degree of renal lesions are not contra-indications to operations.

3. The graver forms of renal disease are contra-indications to operation except it be for disease or growths which have a causal relation to the kidney disease.

4. Patients are more liable to shock and slow convalescence after operation when suffering from kidney disease.

5. Patients may develop acute renal congestion *de novo* after operation and are especially liable to do so if there have been old lesions.

6. That there seems to be little choice between chloroform and ether as the anæsthetic in renal insufficiency, both alike, producing congestion.

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The Care of Pregnant Women.¹

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It is a stirring conviction with many reputable, earnest, and progressive obstetricians, that the time has come when we must disclose our power to the world by increasing the usefulness of our labors; and begin to use it for the prevention, as well as for the alleviation, of the sufferings of pregnant women, as has not yet been done, or else get out of the way. In such an event, deliverance will come to this class of suffering women from another source; but woe to those of us who are found at ease with the assumptions of this responsibility. The responsibility is tremendous, but the obstetrician cannot evade it. He

may selfishly shirk it; but it is absolutely out of his province to shift it. We have need, therefore, to be taught again our first duty; to preserve the human body sound, which be the first principles of the oracles of God.

After carefully studying the ground we may very naturally and wisely conclude that it is unnatural for civilized woman to suffer so universally as she does to-day; and, that civilization and disobedience to the law of nature, is the true source of her present suffering during gestation and childbearing. Through unwholesome civilization — in ignorance as well as carelessness — have come fixed habits of excesses; and if excesses must be

1. Read before the American Association of Obstetricians and Gynecologists, Toronto, 1894.

indulged, evil consequences will follow and must be endured; for Nature's law would have to be changed before they could be either prevented or banished by any method of treatment. It follows then as a natural consequence that to prevent these sufferings will depend, not so much on treatment by application or administration of therapeutic agents, as on the successful education and training of these women, so that they will learn to know how to — and will actually — cultivate the self-discipline requisite to enable them to prevent the continuous irritation from excesses in their modes and habits of life.

If the writer's observations have been correct and unprejudiced, it seems that a revival of learning in obstetric science must needs be instituted among us, destined to find the true cause, or causes, of the unnatural and needless suffering of civilized women. The progress of obstetrics in the immediate future must be made through the knowledge that will be wrought out by the devotees of biology. Thus we shall find our way, on positive ground, back through the morphology of organs, tissues, cells, and blood, to a clear comprehension of the origin of vital activity in protoplasm and the pabulum which sustains it. This is the only way open for us into the primitive arcana of nature, if we would have the wisdom essential to intelligently inculcate that regimen which will successfully prevent the needless sufferings of pregnant and parturient women. The future distinction of obstetric science

can obtain only by an advanced study of human biology. When this truth is propounded, there opens before the thinking mind a vista so transcending all ordinary limitations of obstetrical knowledge, as requires such genius and expansion of the mental eye in order to embrace it in its simplicity, as scarce yet obtains. It remains, then, for our guide, to endeavor by rigid scientific investigation through advanced biologic studies, to make patent the causes of the sufferings of pregnant and parturient women, and to determine exact measures for eliminating these causes, or for neutralizing their effects whenever they have eluded detection or escaped elimination.

I verily believe, that the next coming great advance in this, our special branch of medical science, will be in bringing home to the general practitioner the fact, that the diseases peculiar to women during pregnancy and parturition are very largely preventable. To make him feel his responsibility, both as to their production after the present generally prevailing methods of practice, and also as to the possibilities of their prevention after improved methods. The family physician must be fully aroused to the conscious realization of the fact, that it lies within his power very largely to prevent many of the diseases among the women of the families entrusted to his care. When this obtains, his moral obligation will impel him to promptly do his full duty, by giving adequate instruction concerning the ill effects of improper posture, dress, food, drink, and erroneous habits of living,

including indiscriminate, excessive, and impure sensual indulgences. When that day comes — as I verily believe it to be within the province of our intelligence to successfully inculcate — then, and not until then, may we hope to find that the prevalence of diseases among civilized women will cease to be a reproach to preventive medicine.

But as yet we are compelled to meet the situation as we find it. The condition of the sufferings of civilized women of the present generation, however grossly unnaturally it has been cultivated, must needs have our most careful attention and require our wisest judgment, lest we fail to institute proper treatment for their relief. For the convenience of our consideration, the paramount duties of the obstetrician in the study and care of pregnant women may be classified as follows: —

1. To discover if the patient be actually pregnant.

2. To determine positively if the impregnation be uterine or normal as contra-distinguished from tubal, abdominal, or abnormal pregnancy.

3. To carefully note the pregnant woman's history, including her age, primiparity or multiparity, environments, station in life, general condition of health, period of gestation; as well as her dress, food, drink, and habits of life. To make repeated examinations of the urine and ascertain the temperature, from the time pregnancy is established to the termination of gestation.

4. To make a physical examination for the purpose of accurately

determining the diameters of the pelvic straits; the symmetry and size of the bony outlet; the integrity, condition and position of the vagina, uterus, and other intra-pelvic viscera, and adjacent structures; the state of the abdominal muscles; the presence or absence of hernia, varicose veins, tumors, etc.; the shape, size and condition of the breasts and nipples; the condition of the heart, lungs, mind, stomach, bowels, etc.

5. To observe the state of the fœtus, its strength and viability, as well as the implantation of the placenta.

With regard to the first, all experienced observers have found that, psychological phenomena often called for an intimate study and wise differentiation of every form of hallucination, delusion, illusion, as well as the delirium of cerebral hyperæmia, or the frenzy of the maniac, from toxæmia and eccentric irritabilities. And that such abnormal conditions frequently exist unrecognized, and so continue until they eventually establish their peculiar fixed impress upon the mind and nervous system. Thus when the paranoiac woman simulated pregnancy, and even parturition, she deceived the better judgment of some of the most skilled obstetricians. Pseudocyesis and pseudotocia are recognized abnormal conditions, which so closely resemble the normal condition of pregnancy, and the beginning of parturition, as to demand our highest discriminative faculties in arriving at an intelligently correct diagnosis.

As to the second, it remains a

simple self evident fact, that it should always be positively determined whether the impregnation be uterine or extra-uterine. Whenever extra-uterine foetation is discovered, either before or after rupture of the cyst, the question of treatment is a very grave one. But, experience teaches that this truly marvelous and murderous condition, admits of only one line of action to be followed with any degree of ultimate safety to the life of the pregnant woman. Section must be done. No other line of treatment that has been advanced is so rational and certain in the ultimate saving of life. The perfected technique, as we have it to-day, makes it a safe procedure. We must however bear well in mind what experience also teaches us, namely: that when the placenta is found still in the tubal sac, it is best to enucleate and remove all the tubal sac and ovary; but, that whenever the placenta is found partially or wholly out of the tubal sac and adherent to the peritoneum, bowel, etc., and still alive, the very best that can be done is to let it alone — to leave hands off. In these cases the ultimate safety of the patient lies in the removal of the foetus, cleaning out of the peritoneum of blood clots and all other debris, ligating the bleeding vessels, packing with iodoform gauze, and treating as an open wound; thus allowing the placenta to come away in due course of time by suppuration. My most revered friend and classmate at the University of Pennsylvania, Dr. Joseph Price, than whose experience in these cases there is none more ex-

tended and successful, and who, consequently deserves to be accepted as reliable authority, says: all other lines of treatment that have been advocated, fall into insignificance in comparison with this manner of managing these cases. He also claims that this is a summer disease or accident, being in his experience almost always found only during the summer months; when May comes he looks for extra-uterine pregnancy cases.

The third brings us to thoughtfully consider the influences of those conditions which have been hitherto so grossly neglected, but which demanded decided and determined prophylaxis. The unprecedented rapid progress of civilization in disobedience to the law of nature, as evidenced by the accumulation of wealth on one hand and extreme poverty on the other; the forcing or cramming system of intellectual education with lack of requisite physical training; custom of unwholesome food and drink; deteriorating fashions of dress and habits of society; unbridled sensual indulgences; and the woeful endeavor to equalize the duties of women with those of men, have within the last generation very much deteriorated the child-bearing capacity of civilized women. True, the standard of female beauty is increasing, and decided intellectual growth manifested by woman in all departments of science and art; but, in the same ratio, do we find the remote dangers as well as the immediate accidents of gestation and child birth have increased. Hence, we find that flaccidity of the abdominal, spinal, and

pelvic supports; chronicity of the shattered exotic nervous systems; abnormal state of the ovaries; subinvolution of the uterus, etc., have marvelously increased in late years, notwithstanding the much vaunted so-called hygienic advances in improved habits of living and reform in dress.

The thoughtful obstetrician will, with inexorable discipline, advise his patient as to the requisite regime. The consciousness of his full duty will impulse him to insist upon:

1. Absolute, regular hours and wholesome environments.

2. Plain but nutritious and wholesome food and drink, being principally composed of fresh, lean meats, fresh fruits, pure milk, and distilled water.

3. A proper amount of exercise, by walking or light labor on foot, and maintaining the correct erect posture. Whenever infirmity forbids such exercise, recourse should be had to massage, and as much time passed in the open air as is advisable under such unfortunate circumstances. Rest in the recumbent posture after meals and fatiguing efforts, with not less than ten hours sleep out of every twenty-four.

4. An open condition of the bowels and skin, which is to be chiefly maintained by proper diet, exercise and bathing, the wearing of flannels, warm low-heeled shoes, and loose garments, and in rare cases, the proper use of laxatives and hot water enemas.

Urinalysis and thermometry are especially commended at frequent intervals from the time that pregnancy is established until the beginning of

parturition. They are simple in detail, yet how prolific of averting the culmination of conditions very hazardous to both mother and child. Conditions which otherwise are frequently discovered only by the appearance of anasarca of the inferior extremities, cedema of the face and lungs, or a seizure of eclampsia, after which attention is given to these searching steps, but often too late to be of any value in devising a prophylaxis. This very naturally raises the question, is there a prophylaxis for the aforesaid conditions? The experience of an earnest, rational endeavor in a limited number of cases warrants the opinion that very much may be done in this direction. In proof of this it is needless to confine reference to personal experience in private practices, for in addition we find that the maternities likewise furnish abundant evidence in support of this declaration. Here we may cite as the most striking example, the indefatigable labors of our eminent fellow Dr. Joseph Price, in his connection with the Prestion Retreat at Philadelphia, whereby both that Institution and himself have become renowned in establishing the fact beyond all doubt or cavil, that these complications can be prevented.

A word with regard to the term puerperal fever, which is misleading and fails to express the condition it is intended to imply. It should therefore be expunged from our literature and be replaced by the proper term *parturial sepsis*. Parturial sepsis is a surgical sepsis, arising from the conditions in which women are found

during the extrusion of the uterine contents, similar to those during surgical procedures. The same classes of septic infection and septic poisoning occur in the non-pregnant state during operations upon the pelvic viscera done without due regard to absolute cleanliness, and in hospitals where patients are crowded together with want of proper sanitation.

Under the fourth head of the subdivision of this subject, it may be remarked that pelvimetry is an equally essential requisite with urinalysis and thermometry. Deviations from the normal, symmetrical pelvis, the diameters of the pelvic straits, and the inclination of the bony excavation, exercise marked influences in proportion to the degrees that they exist.

In an abnormally broad, capacious pelvis, with obliquity lessened and supports relaxed, we find that in the earlier period of gestation, the tendency is to misplacement of the gravid uterus. These abnormal uterine positions are usually manifested earlier by bladder or rectal difficulties with bearing down or pressure in the pelvis, and a dragging sensation from the lumbo-sacral region, etc. It is a noteworthy fact that in these cases there is almost invariably found to be a want of the correct posture, erect posture. The woman herself unconsciously increases the aforesaid difficulties by assuming a more or less stooping posture, in her endeavor to make herself comfortable from the dragging sensation below. Thus we find the abdominal and spinal muscles relaxed, the lumbo-sacral spine receding behind its normal axis — per-

pendicular with ear, shoulder, hip and ankle — the rate of weight of the superior trunk gravitating back of this normal axis and falling perpendicularly behind the heads of the femurs; whereby the pelvis is swung upon the femur heads from an oblique to a more or less transverse position, while the superincumbent weight of the abdominal and thoracic viscera, instead of being directed forward by the normally advancing lumbo-sacral spine and supported upon the pubes and lower portion of the abdominal muscles, now falls directly within the basin of the pelvis exerting its injurious effect upon the contents thereof. The real causes of these conditions being thus clearly revealed, the treatment becomes very simple. This consists in first re-establishing and maintaining the correct erect posture, thereby securing the normal obliquity of the pelvis by advancing the lumbo-sacral spine in its normal axis of the body. Experience has established the fact that the correct erect posture in these cases is secured and maintained the better and easier by virtue of proper external support. The external support which fulfills this purpose the better and easier is one designed by the writer and fully detailed in a paper read before the International Periodical Congress of Gynecology and Obstetrics, at Brussels, Belgium, September, 1892,—and published in the International Medical Magazine, October, 1892,—and manufactured by The Natural Body Brace Company, of Salina, Kansas. The normal equipoising of the superior trunk upon the lumbo-sacral spinal axis having

been restored, whereby the evil influences from the weight above as a prime causative factor in intra-pelvic disturbances being happily overcome, there remains but attention to be given to the insignificant weight of the misplaced pregnant womb itself. This is usually easily corrected, when free from adhesions, by proper posturing and afterwards maintained by proper internal support with some pessary suitably fitted to the case.

When, on the other hand, the pelvis is abnormally distorted or contracted, the question of how best to conduct the gravidity has been even a more unending source of discussion than the preceding condition. Here pelvimetry furnishes us the chief guidance. But before we progress further, let us first break loose from the traditional shackles of our predecessors and their authority, which have too long retarded freedom of thought to such a degree, that he who dared to doubt met but derision. I refer chiefly to the murderous practice of inducing premature delivery and embryulcia in this condition. In the present light of science these procedures have no place in the obstetric art in connection with a viable foetus. They simply deserve to be mentioned that they may be the more effectually relegated to the past. This leaves us to choose principally between but two procedures whenever we find the pelvis so distorted or contracted, that it precludes all probability of delivering the living child, namely, symphysiotomy and Cæsarean section. Without specifically considering all the points of this very serious condition — which

fortunately for us is, comparatively speaking, very rarely encountered in the native born American woman — I would unhesitatingly advise against the termination of gestation, looking more hopefully to ultimately saving the life of both mother and child by resorting to one of the aforesaid operations. It is to be remembered, however, that it is the duty of every intelligent obstetrician to become thoroughly familiarized with the indications as well as the technique of both these operations, neither of which are to be lightly undertaken by anyone who does not possess the requisite skill, both in the obstetric art and abdominal surgery.

With regard to the proper selection of these two operations, I can do no better than refer to my friend, Dr. Barton Cooke Hirst, of Philadelphia, who is an acknowledged authority on the obstetric advances, in his address before the Washington Obstetrical and Gynæcological Society, Nov. 17, 1893, and published in the *Medical News of Philadelphia*, Dec. 2, 1893. We may therefore be guided by the rule that at term, symphysiotomy is available only in cases where the conjugate measures over 67mm, while if the conjugate is found to be 67mm, or under, the only recourse to be had is Cæsarean section.

The destruction of the embryo is, however, not only warranted, but becomes a requisite under such certain circumstances or conditions; such as the presence of large fibroids in the body of the uterus, or large tumors involving both the ovary and uterus, also cancers of the uterus,

and in certain cases of placenta prævia. Placenta prævia is another abnormal condition deserving attention. It properly belongs to that class of appalling accidents in the lying-in-room, such as eclampsia, post-partum hæmorrhage, rupture of the womb in uterine pregnancy or of the cyst in tubal pregnancy, etc., which allow but little time for action. Experience teaches that the proper use of the forceps in these cases is to be preferred to the hand. The chief reason being that a narrow bladed forceps can be introduced much earlier than the hand — requiring a dilation of only about one inch as compared with two and three-quarters inches for the hand — and, by grasping the head and bringing it down tampons the placenta at once; whence time may be given sufficient to obtain full dilation and delivery with the greatest possible safety to both mother and child. In these cases we may very properly follow the one line of action. As soon as the diagnosis of placenta prævia is established our action must be prompt in evacuating the uterine contents. Hæmorrhage is the danger signal. When this signal is given early, say prior to the sixth month, and the diagnosis established, we should proceed without any regard for the life of the child. When, however, this signal is given later, we should proceed as promptly, but with all possible endeavor to save the life of both mother and child. Whenever hæmorrhage takes place in these cases it is nature's signal to us that there is great danger ahead; that the condition is so serious as to endanger, if

not to take the life of the mother at any moment. We can accept the situation only as serious, and must act promptly and efficiently. The proper antiseptic precautions being observed with special reference to the vagina and the accoucheur's hand, the patient being placed under anæsthesia, introducing first the index finger into the cervix, dilating gradually until two fingers are successfully introduced, and, when sufficiently dilated to admit of the forceps, pass the fingers through the body of the placenta rupturing the membranes and place the forceps on the head, bring it down and tampon the placenta at once. When, as sometimes happens, the dilation is greater and the presentation abnormal or less favorable the accoucheur had better resort to the passing of his hand and turning by Braxton-Hicks method and drawing the child into the cervix, and thus arrest the hæmorrhage. The hæmorrhage once checked, the subsequent delivery will be fully under control.

I have in this paper but sketched some of the salient and moot points of the prophylaxis of the complications and needless suffering of pregnancy with no attempt at thoroughly elucidating or elaborating any one of them. Having no pet theory to promulgate and sustain at all hazards, no long list of cases and statistics with quotations and abstract from an exhaustive roll of writers has been made out. And, while universal conviction may not be with me on premises somewhat narrowly drawn, still I hope the attention of this Association may be drawn to their thorough con-

sideration, that free discussion may evolve all the facts of this interesting subject, and, finally, to find with many of you these facts received with

favor and not only to maintain an excellent reputation, but also to increase in favor on closer acquaintance.

EDITORIAL.

Ocular Affections of Uterine Origin.

CASES relative to this question have often been reported by different writers, and two important memoirs on the subject have lately been published, namely, a review by Dr. Janot, which appeared in the *Montpelier Medical*, and a thesis by Dr. Pargoire, having for title, "*Les Troubles oculaires dans la menstruation.*" Menstruation, even normal, can be accompanied by different troubles of the eye. Finkelstein, who examined the functions of the eye during menstruation, came to the conclusion that very often at that time there was a diminution of the visual field, which attained its greatest intensity when the loss of blood is the most abundant, and the sense of color is also at times abnormal. *Styes à répétition*, herpes of the cornea and hemianopsia have also been observed at each regular menstrual epoch. Still more, iritis and irido-choroïditis have been known to appear a few days before the menses and disappear with the end of them.

Menses have an influence over the healthy eye, but this influence is still more manifest when this, already

the seat of disease, the exacerbations then appear with the greatest ease. After a surgical traumatism an inflammatory attack has been observed to come on at the apparition of the menses. To these facts may be added cases of catarrhal conjunctivitis coming on with the menses, and Dr. Pargoire relates three most interesting examples. At the time of puberty, when menstruation has not attained its regularity, ocular affections are not uncommon. Keratitis and hemorrhages have been mostly observed, but iritis, irido-choroïditis and even detachment of the retina have been met with. The greater part of these affections cease after the menses become regular. However, Dr. Pargoire relates a case of embolus of the central artery of the retina taking place during these conditions and terminating in an atrophy of the papilla.

Troubles which may be produced at the change of life are still more frequent, although not many cases have been published. Irido-choroïditis is the most often met with, then comes optic neuritis but

rarely, which, however, may end in complete cecity. The ocular lesions produced by pregnancy have been much written about. Often it is true albuminuria is the intermediary of the ocular lesion and the pregnancy, but in this paper the cases considered had no connection with nephritis. Amauroses, partial or complete, have been met with. Santesson mentions a case of a woman who had complete amaurosis of both eyes during the last five months of her eight successive pregnancies. Sight came back after each confinement, but in the first confinements the amaurosis disappeared one week after labor while in the last, a month elapsed before vision was perfect.

Ulcers of the cornea have been recorded in this condition. Blodig mentions a remarkable case of strabismus occurring with such regularity that the patient knew when she was pregnant. Detachment of the retina and especially hemeralopia have been recorded. Galezowski especially mentions diseases of the membranes of the eye, as well as amblyopia and amaurosis without perceptible lesions, but he considers them as symptoms of hysteria or due to troubles of innervation. These diseases may take on a great intensity if the eye was already diseased, which is consequently aggravated and more complicated by the existing pregnancy.

Labor and the puerperal state can hardly be separated. The *début* usually takes place either during the deliverance, when for example there is hemorrhage due to retained pla-

centa, or immediately after. Labor the more often is simply the cause of the aggravation of the ocular symptoms which have made their appearance during pregnancy and often it is at this time that their regression commences to finally end in recovery by suppression of the cause. But there are cases in which the ocular came on during labor itself; in a woman mentioned by Ringland, sight became weaker and weaker during labor and ended by being totally abolished. A few days later it again was normal. These are nothing more or less than cases of amaurosis or amblyopia that have been observed in these circumstances, but embolus and irido-choroiditis have been met with.

When the uterus is in a pathological condition, ocular troubles are still more frequent. In amenorrhœa, ocular congestions can occur, similar to real supplementary hemorrhages. Keratitis, hemorrhage, iritis and irido-choroiditis are the ordinary effects; but the optic nerve itself may be interested. The consequences of dysmenorrhœa are nearly the same; serous iritis is the most frequent manifestation. Its presence is indicated in most cases by photophobia, lacrymation, and painful tension of the globe.

Ocular troubles in relation to abortion have not been much studied. A professor of Lyons reports a case of irido-choroiditis following an attempt at abortion, and this fact confirms the theory that all these ocular affections are produced by an infection having its origin in the uterus. Affections of the uterus,

other than menstrual troubles, may occasion ocular lesion, whether it be an inflammatory lesion or a mal-position of the organ. In fact, the difficulty in the flow of the menses can favor the introduction of infectious germs into the organism, but that which is still more favorable is a continual *port d'entrée* always in contact with liquids eminently proper for the culture of pathogenic microbes.

Ulcerations of the cervix, metritis, cancer of the uterus, can produce lesions of the eye. It is consequently most important to recognize the fact that certain affections of the organ of vision are under the dependence of uterine disease. The physician will arrive at the diagnosis by the periodical appearance of the lesion, which will oblige him to question the patient

as to the state of her menses. But it is not always so, and when one has to do with metritis, or ulcers of the cervix which the patient herself ignores, many difficulties will be encountered. Consequently, it must be remembered that there are ocular affections which will persist as long as the uterine lesion exists. On account of the probability of the infectious origin of these ocular troubles, it appears indicated, even when the infection is in relation with a simple menstrual disorder, without urethritis, etc. to try to bring about menstruation at regular epochs, and during the interval, practice antisepsis of the vagina and neighborhood of the uterus. Perhaps, by this method, relapses will be avoided.

Should Antiseptic Vaginal Douching be Made a Routine Practice During the Puerperium ?¹

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It is not exactly correct to say that Semmelweiss was the first who informed the obstetric world as to the true source of puerperal septicæmia; but his name stands out so prominently in connection with the various discussions on the subject that he is, by almost general consent, considered the father of modern antiseptic midwifery. In 1847 he clearly and

positively enunciated the view that puerperal fever was caused by the introduction of putrescent substances deposited in or about the genital tract of the parturient woman. The confrères of Semmelweiss were somewhat slow in accepting his views; but many earnest workers in various parts of the world in the course of years proved conclusively that they were substantially correct. The investigations and experiments of Pasteur and

1. Read before the American Association of Obstetricians and Gynecologists, at Toronto, Sept., 1894.

Lister gave a wondrous impetus towards advancement, and did much to place our knowledge of antisepticism and asepticism on a definite scientific basis.

Lister's practical application of such knowledge to his work in surgery stimulated surgeons and obstetricians in all parts of the world, and caused them to make special efforts to avoid septicæmia. The obstetricians of Germany were especially enthusiastic, and Americans were not slow in following their example. The new ideas and the new methods spread rapidly from hospital to hospital in Germany, France, Great Britain, America and other countries. In 1872 rigid antiseptic methods were carried out in a systematic way in numerous maternities. Mortality rates had a marvellous fall. Those horrible epidemics of that fearful scourge, puerperal fever, which had slain its thousands, were rapidly being repressed, especially in large maternities. The bright reports and minute descriptions of the various methods were spread broadcast over the whole civilized world, and incalculable good was derived therefrom.

But, gentlemen, puerperal septicæmia or puerperal infection (call it what you will) still exists. The annual reports of the Registrar General of Great Britain shows that the death rate from childbirth has not appreciably diminished in England and Wales. In fact, in certain parts of England the death rate from puerperal septicæmia has actually increased in recent years. In the United States and Canada the mor-

talidity from this cause is probably less now than it was fifteen years ago, but it is still very high. Why is it that such a deplorable condition of things in connection with the practice of obstetrics continues to exist, notwithstanding the flood of light which has been thrown on the subject during the last fifty years? I will not now attempt to answer the question.

Under the circumstances it behooves us as a society, which includes obstetrics as one of the subjects within its province, to assist others in carrying on a vigorous fight against this deadly but repressible foe — puerperal septicæmia. With this object in view it was decided by our council, on the advice of Dr. McMurtry, to have a discussion on one of the proposed preventive measures, viz., antiseptic vaginal douching, and I have been honored with the request to open the discussion.

Since the year 1848 antiseptic vaginal douches have been more or less in vogue. In the earlier years chloride of lime, chloride of soda, permanganate of potassium, sulphate of copper, etc., were used by various obstetricians. So far as I know, such injections were first used in America by Fordyce Barker in the Bellevue Hospital in New York about forty years ago, and were continued by him as a matter of routine practice about twenty-six or twenty-seven years. In later years carbolic acid became the favorite. In 1876 Tarnier recommended bichloride of mercury, which, to-day, is probably the favorite antiseptic agent in obstetrical work. I will not mention any of the other

numerous antiseptic remedies, which have been used, nor will I attempt to discuss their comparative merits.

Vaginal antiseptic douching during the puerperium was most popular between 1875 and 1885. It appeared at one time that it would be universally adopted as a routine prophylactic measure. The method seems so charming in its simplicity, and appeared so perfectly innocuous, that it was considered by many somewhat of a crime to neglect it. In December of 1883, about two years after Fordyce Barker had given up the practice, Gaillard Thomas became its most enthusiastic champion. His address on the subject of the prevention and treatment of puerperal fever, delivered before the New York Academy of Medicine and the discussion which followed, including a paper by Barker, read at an adjourned meeting, were exceedingly able, and created a great deal of interest during the year 1884. The douching wave reached its greatest height about that time, but since then a reaction has set in, and at the present day opinions are divided as to the utility of the measure in normal cases.

I consider it quite unnecessary to enter minutely into pathological details. Probably all here will admit that puerperal septicæmia is due to the work of living organisms, which are largely, if not altogether, introduced from without. Bacteriologists have taught us much on the subject, but have not yet proved definitely what form, or forms, of bacteria cause the poisoning. Certain kinds of cocci, especially the streptococcus,

have a certain connection with the sepsis as causation agents, but exactly what it is we know not now. The bacteria are so much under the influence of surrounding structures, and are subjects to so many modifications, that the study of their life history has been found very intricate and difficult. It seems in some cases that a certain number of bacteria already lodged in the parturient woman are comparatively innocuous until other members of their species are imported from foreign sources, when suddenly all commence to work together with deadly effect; or sometimes they are kept harmless by the surrounding secretions, as, for instance, in the vagina, until they are pushed into other fields, such as the cervical tears or the uterine cavity, when they immediately wage war. From a clinical standpoint the important thing to recognize is that septic matter — something that cripples or kills our patients — when introduced from without by dirty finger tips, dirty instruments, and from dirty surroundings of all sorts, creates all the mischief.

In order to assist in avoiding the evils our Council directs me to ask the question, Should antiseptic vaginal douching be made a routine practice in the puerperium? In my opinion, no. While I hold a decided opinion, and am quite willing to express it, I have a great respect for many eminent obstetricians who say yes, and am always glad to hear their arguments, and, I hope, weigh them carefully. I happen to be one of those who were not captured by

the fascinations of vaginal douching as pictured by so many in years past. If I were at all inclined to feel proud of this my pride ought to be lowered by a consideration of the fact that a large proportion of those who at that time held views similar to mine were too lazy, or too careless, or too indifferent to give the matter much thought or study. I have no feeling but that of contempt for this class of obstetricians, who are mainly responsible, in my opinion, for the high mortality rates which still prevail in midwifery. I have sometimes been misunderstood, and misquoted; and, although I am not likely to be misunderstood by the members of this Association, I desire to add that no man has a greater desire than I to see a rigid adherence to the modern rules of asepsis and antisepsis on the part of all who practice our obstetric art.

I have studied the subject pretty carefully for the last eighteen years. I was much impressed with many of the favorable reports showing the good effects of vaginal douching. About sixteen years ago, and for a number of years thereafter, I watched the work of a friend in Toronto who practised the methods. We carefully compared notes, and had many discussions on the subject. His methods of antisepticism both in surgery and obstetrics were very carefully and thoroughly carried out. He had high temperatures more frequently than I; but for years, he thought they were due to accident and not to his methods. He thought, as did many others, that the douching with weak solutions of

carbolic acid could certainly not do any harm if carefully done. Although he has since relinquished obstetrics for the more narrow field of surgery, he quite came to the conclusion before his departure that the douching was at least useless in normal cases. I don't know whether it was Breisky or Tarnier who first used the expression, "Everything that is useful is dangerous," but it has always struck me as being both true and sensible. If it can be shown that douching is useless it is surely better not to carry out a method which is very distasteful to women, whether it be dangerous or not. I think, however, it is both useless and dangerous, and will endeavor briefly to give my reasons, which are founded partly on the results of my own observations, but chiefly on the reports of those who have had experience in the larger maternity hospitals in various parts of the world.

1. Douching disturbs that perfect rest and quiet which are so desirable for a patient after labor. I do not now refer to surgical rest of wounded tissues, but to rest in a general way which is so delicious to a weary and more or less exhausted woman. I have often thought, and sometimes stated, that meddling midwifery reached the acme of absurdity, when, in 1883, a distinguished New York gynecologist recommended about the most persistent and aggressive obstetric meddling that had ever been conceived by the brain of man. He advised, among other things, the administration of a douche every eight hours, and the introduction of

an iodoform suppository every two or three hours for at least ten days after delivery: that is to say—the bruised and lacerated vagina was to be invaded from eleven to fifteen times every twenty-four hours for at least ten days, if the unfortunate victim should live so long. Little wonder was it that Fordyce Barker entered a strong and vigorous protest!

2. Douching is unscientific on surgical grounds. After labor the utero-vaginal canal is bruised and wounded. On surgical principles the most important points in the treatment are rest, pressure, position and drainage. By rest I refer to that physiological rest to which so much importance has been attached by Hilton, and many others. The wounds of the cervix and vagina are as a rule kept closed by the elastic and even pressure of the surrounding tissues. The introduction of suppositories and douching seriously interfere with rest and pressure as described, and in my opinion, materially delay the healing of those wounds. The recumbent posture with the slight changes in position required in voiding urine and fæces is well adapted for drainage.

3. Douching does not lessen the dangers accruing from the presence of bacteria in the vagina. This is probably the most difficult contention to prove definitely. Do destructive organisms ever exist in the vagina after labor? Undoubtedly, yes. In some cases cocci of various kinds are present in varying numbers. The recent investigations of Doederlein,

Winter, Steffek, Koenig, and others confirm the opinions of former observers as to the occasional, if not frequent, presence of pathogenic micrococci in the vaginal secretions after labor. It is generally agreed, however, that in normal cases the vaginal mucus is strongly acid. The acidity is produced by innoxious organisms which have their habitat in the healthy vagina. It happens that these organisms have some restraining, if not destructive, effect on the pathogenic cocci. Vaginal antiseptic injections may interfere with this normal acidity, and thus chemically lessen the resistance of the tissues to bacteria. Taking these views as correct we learn that nature has provided a secretion in the vagina which prevents the wicked organisms from doing any harm; and, such being the case, douching is at least useless.

4. Douching is actually dangerous. I have already alluded to certain of these dangers, especially from a surgical standpoint. It is apt to disturb clots, and thus open avenues for infection; to open lacerations of the cervix and vagina, and thus prevent them from healing; to wash bacteria into the uterine cavity, and thus cause septic endometritis. Among other dangers which are generally due to accident or carelessness are the introduction of septic matter by fingers and instruments. Some mention other rare or minor dangers which I will not refer to in this paper.

Many of the arguments thus far advanced are to a certain extent

theoretical; and, in connection therewith, the results of clinical experience ought to assist us materially in arriving at correct conclusions. Fortunately statistics prove beyond the possibility of doubt that the results of our modern methods, whether with or without douching, are vastly better than those of the pre-antiseptic era. The fearful mortality rates of five to ten per cent., or even more, have been reduced to about one-half of one per cent., or less, in all our well ordered maternity hospitals both in the old and the new world. As far as I can learn the weight of evidence goes to show that the hospitals in which the routine douching is not practised have better results. Baruch of New York published a table, from which it appeared that in the following hospitals where the douche was in use — Charité, Parma Maternity, and Glasgow Maternity—the mortality ranged from 1.5 to 3.42 per cent., while in the Tarnier Maternity, Paris, Prague Maternity, Copenhagen Maternity, and New York Maternity, where the douche was not in use as routine practice, the mortality ranged from 0 to .56 per cent. (*N. Y. Med. Jour.*, March 22, 1894.)

It will be seen by this that one maternity (the Parma) had the high mortality of 3.42 per cent. Now, although I am not partial to douching, I do not for one moment suppose that the bad results at Parma were due to this practice alone or chiefly. There must have been other elements at work.

More recent reports prove conclusively that the mortality rate may be

brought down to 5 per cent. or less whether douches be used or not. From one of Boxall's papers we learn that the mortality in the London Lying-in-Hospital, for five years previous to 1890, was only .418 per cent., the number of patients treated being 2,150. Vaginal douching was done as a routine measure twice a day during the puerperium. I was, for a time, much impressed with statistics such as those quoted by Baruch, but the statistics from London, such as those just mentioned and other results under certain obstetricians in Edinburgh and Glasgow, have perhaps taught me a little humility. After all, douching or otherwise as a routine practice is simply one detail among a thousand or more which go to make up the long and perhaps tortuous chain of antiseptic and aseptic midwifery.

I am very strongly impressed, however, with the opinion that the use of the douche does sometimes, if not frequently, cause a rise of temperature which must of course be considered an evil. During the period referred to by Boxall, when the death rate was .418 per cent., the labors followed by fever from all causes amounted to 40.65 per cent. In a number of maternities on the Continent where no douching is done the percentage of febrile complications ranges from 6 to 10 per cent. Leopold has compared the two methods in Dresden with the following results: Of 2,388 deliveries with injections, 17.2 per cent. had fever; of 1,136 deliveries with vaginal washings, 20 per cent. had fever; of 1,123 deliveries

with no injection at all, only 9.7 per cent. had fever (*Medical News*, Feb. 14th, 1891). In all these cases similar antiseptic precautions were applied to everything which approached the patient, but in the latter series there was no interference with the parturient tract. In comparing the second with the third set of cases it will be seen that in 1,000 cases, 200 had fever after deliveries with injections and vaginal washings; while, in the same number, only 97 had fever when no injections had been employed.

In considering the statistics from modernized maternity hospitals, I think it important to keep in mind the fact that the injections are administered with care and skill. In private practice they are frequently given in a careless and slovenly way, notwithstanding conscientious efforts on the part of the accoucheur to guard against such faulty work. A large proportion (more than half I think) of our nurses do not know how to administer a vaginal douche properly. If you will admit, for the sake of argument, if not absolutely, that Leopold's results show that skillful antiseptic vaginal douching is not only useless but actually dangerous, then I think it follows as a logical

conclusion that indiscriminate douching, by good, bad and indifferent nurses, such as are placed at our disposal in private midwifery, is dangerous in a still greater degree.

Such is my opinion at the present time, and such it has been for many years, but I would hesitate to say that it is final or unalterable. I have not yet reached that happy state when I feel that I know all that is worth knowing about antiseptic midwifery. It is a subject which does not grow old with me—in fact it is ever new. I am as anxious now as I ever was to learn something new about antiseptic and aseptic methods, to adhere religiously to what I consider the best rules in both private and hospital practice, and to do what I can to teach others, especially my students, how to avoid preventable maiming, and preventable death. I am not sorry this question is still unsettled, I think it exceedingly fortunate that we are able to get from time to time such valuable and accurate reports from the various large maternities, and hope we may in the near future get still more light on a subject of such vast importance from a humane as well as a professional point of view.

The Relation of Hysteria to Structural Changes in the Uterus and its Adnexa.¹

BY AUGUSTUS P. CLARKE, A. M., M. D.,

CAMBRIDGE, MASS., U. S. A.

The author says that having early in his practice become interested in the subject of hysteria he began to make special observations. He had noticed in a number of cases of girls who suffered more or less during the menstrual periods that they exhibited at times marked symptoms of hysteria. Out of a series of twenty cases presenting indications of such a peculiar type of nervous disturbance he was able to diagnosticate in sixteen, well pronounced features of anteversion of the uterus. In three of the cases anteflexion was unusually severe. Another interesting phase observed in those cases was the position of the ovaries. In a larger series of such cases prolapse of an ovary into Douglas's cul de sac was not an infrequent occurrence. When prolapse occurred, it was not always on the left side; ovaritis and prolapse on the right side gave rise to symptoms usually more severe than when the morbid condition appeared on the left side. Cases illustrative of the various phases of anteversion productive of hysterical symptoms are mentioned by the author. Hysteria may occasionally be dependent on certain odd forms of procidentia uteri, on laceration of the cervix, and of the perineum. Gonor-

rhoeal inflammation involving the Fallopian tubes and the ovaries may be prolific of hysteria. Such inflammation may assume a latent condition and so become chronic before the gravity of the especial morbid processes has become fully recognized. It is in this class of cases that hysterical paroxysms are liable to occur. Morbid processes continuing for some considerable time in the delicate stroma of the ovary are liable to give rise to such mechanical or physical constriction in the parts involved, as to set up at intervals an irregular reflex irritation that may extend through the medium of the spinal nerves and the sympathetic ganglia to almost every part of the entire organism. The fact that hysteria often breaks out at or during the menstrual period favors the conclusion that its manifestation is due to lesions connected with the uterine system. A severe strain at that time put upon these sensitive organs may, when they are but even in a slightly abnormal condition, set in motion reflexes that may culminate in explosive attacks.

Temperature, occupation and climate may to some extent act as exciting causes, but these agencies can hardly be considered as being capable of superinducing hysteria. An hereditary predisposition to nervous complaints would at first thought seem to

¹An abstract of a paper read before the American Association of Obstetricians and Gynecologists at its Seventh Annual Meeting held at Toronto, September 19-21, 1894.

be sufficiently adequate for a determining cause; the author's own clinical experience as carefully recorded fails to give recognition to influences of such a taint.

In diagnosing chorea and epilepsy the existence of certain factors have usually been deemed to be essential; in the absence of some such supposed factors the disease has sometimes been pronounced an attack of hysteria.

Later observations and daily clinical experiences in the practice of gynecology justify the restricting of the terms hysteria and hysterical phenomena to much narrower limits in the sphere of invasion of nervous affections than formerly. The older writers were inclined to indulge in too much metaphysical speculation; their descriptions were often overdrawn. The causes of hysteria prevailed more in their theory than in their actual practice.

The achievements of the gynecologist and abdominal surgeon, are, however, well recognized. His attainment to the greatest proficiency in the diagnosis of obscure lesions in the genitalia has proved to be all important in the solution of the question before us.

From the author's observation and experience gained in conducting the treatment of cases of hysteria, the following propositions have been formulated.

That in a large proportion of cases of genuine hysteria, there exists some distinct and tangible lesion of the uterus, appendages or of parts immediately connected, and that the

hysterical phenomena resulting from such organic disturbances will not yield until definite measures have been instituted for overcoming the original malady.

That in some cases impoverishment of the blood, and other constitutional influences may give rise to paroxysms of hysteria, that these attacks are often transient, much more mild, and when properly treated by constitutional measures may disappear altogether. That in those more obstinate cases of nervous perversion in which there may exist to a greater or less extent hyperæsthesia, dysæsthesia, anæsthesia, analgesia and the like, the disease may not necessarily be dependent on factors giving rise to the disease in question, but may be of the nature of epilepsy or of insanity, or be dependent in whole or in part on morbid processes connected with some portion of the sensorium. That the diagnosis of such cerebral lesions will be strengthened when in the absence of a manifest organic disturbance of the genital tract there is a history of a severe blow or injury to the head, or of influences or factors which have produced a profound or prolonged impression on the encephalic centres. That in hysteria, on the other hand, none of these conditions exist; the phenomena are merely the result of reflex movements which occur for the most part during the period of the greatest activity of the organs of reproduction. That at such a time a seemingly limited amount of tumefaction, or an adhesion of a tube or an ovary, or an adventitious change in

the shape or relation of the uterus, is capable of effecting constitutional as well as local disturbances of the nervous centres. That though an hereditary predisposition may to some extent be an exciting cause of hysteria, such an influence, as an original factor, should nevertheless be regarded as unimportant.

That when hysteria occurs later in life, it is *prima facie* evidence that the genital tract has become diseased or has taken on a preternatural condition.

That if after careful examination such a diagnosis of local physical obliquity cannot be established, the practitioner should, though the patient suffers from perverted sensations referable to the nervous tracts, be suspicious that disease has taken lodgement in some portion of the encephalon or of the organism under a more immediate control of the cerebral nervous system.

SOCIETY PROCEEDINGS.

Transactions of the American Association of Obstetricians and Gynecologists.

SEVENTH ANNUAL MEETING HELD IN TORONTO, ONTARIO, SETEMBER,
19, 20 and 21, 1894.

PRESIDENT'S ADDRESS BY GEO. H. ROHE, M. D., ON INTESTINAL OBSTRUCTION FOLLOWING OPERATIONS IN WHICH THE PERITONEAL CAVITY IS OPENED. [ABSTRACT].

AFTER collecting cases reported in literature and personal communications, he had found 75 deaths caused by intestinal obstruction following abdominal operations and believes that this represents only half the mortality from this cause, for no doubt not a few fatal cases of peritonitis and intractable vomiting after laparotomy are really cases of obstruc-

tion of the bowels. Post-operative intestinal obstruction can be divided into two classes: the first from mechanical causes, adhesions, volvulus, accidental fixation, by sutures, etc.; the second due to paralysis of peristaltic movement of the intestine following sepsis or injury to the nerve supply of the muscular coat. Acute obstruction may occur immediately after or with in a few weeks subsequent to the operation, or may develop gradually, not being complete until months or years later. Obstruction is usually due to abnormal

fixation of the intestines by adhesions, or to compression by peritoneal cords or bands of inflammatory origin. Olshausen states that obstruction after ovariectomy is always due to adhesions between bowel and pedicle. The speaker had seen a case in which the small intestine was doubled upon itself and so adherent that the gut was entirely impervious. Similar cases have been reported. Adhesions of a knuckle of intestine to the abdominal incision are frequently found to be the cause of obstruction by producing acute flexure of the bowel. Any hindrance to the passage of the contents of the bowel at the point of flexure causes dilatation above and consequent increase of flexion; peristalsis is at first increased, but if the obstruction is not soon overcome, circulation is interfered with and dilation of the bowel with paralysis follows. Spencer Wells mentions another form of obstruction caused by a coil of intestine sinking into Douglas' cul-de-sac and becoming fixed there by adhesions. King reported a case in which the descending colon was glued fast at an angle to the posterior surface of the uterus; and Ross, a case in which, after complete abdominal hysterectomy, autopsy showed that a small portion of intestine was adherent to the abdominal incision behind the edge of the omentum and another loop had slipped through this adhesion between the bowel behind and the abdominal wall in front, causing obstruction. Fritsch mentions a case where a fold of intestine was caught under a suture, and in another the bowel was

found between two sutures in the incision. Other cases were mentioned of similar cases of obstruction due to adhesions and peritoneal bands, as well as to internal hernia through an opening in the omentum. Volvulus sometimes occurs after abdominal section, but probably only after some previous adhesion or constriction of the gut. By far the larger proportion of cases of post-operative intestinal obstruction are due to adhesions of the intestines to each other, to the abdominal walls or to other organs, and it is necessary to inquire what is the cause of the adhesions, and if they can be prevented. Sepsis, destruction or separation of the peritoneum, strong chemical antiseptics, rough handling of the peritoneum by sponges, hands, etc., prolonged exposure to air and certain suture materials have all been accused. Clinical and experimental observation have shown that neither is sufficient to account for all cases. Intestinal or omental adhesions are found in nearly every case of laparotomy to exist at the margins of the incision, and occur in cases in which all the above mentioned conditions can be excluded. The symptoms of intestinal obstruction *post laparotomiam* are essentially the same as in primary obstruction. Unless obstruction is due to some untoward occurrence in the technique, marked symptoms are not likely to show themselves for several days after operation. If a patient does well for three or four days or more after abdominal section, and is then suddenly attacked by pain, followed by vomiting, tympanites, flatus and arrest of

feces, intestinal obstruction is probable; if vomiting becomes fecal, pulse rapid, urine scanty, and symptoms of collapse set in, the diagnosis is reasonably certain. When the obstruction is high up in the small intestine, fecal vomiting is usually absent and distention less pronounced; the bowels may move several times after pain begins, so that the diagnosis is more or less uncertain. Among other signs to be noted is the occurrence of local distention of bowel above the point of occlusion in mechanical obstruction. Coincident with this local meteorism is an increased peristaltic movement above the obstruction. In the later stages, particularly if septic peritonitis with intestinal paresis occur, these distinguishing signs are no longer available. Obstruction due to paralysis of the intestine (probably always due to septic peritonitis) does not present these symptoms. The abdomen presents a uniform globular distention without movement of the intestines. Another sign is furnished by urinary reaction. It is claimed that in complete obstruction of the ileum there is always indican in the urine. In obstruction of the colon or high up in the small intestine this reaction is usually not present. Rosenbach attributed great prognostic significance to this reaction. So long as it remains the case is a grave one. Prognosis of primary intestinal obstruction is grave, and, following closely upon an operation, as serious as abdominal section or vaginal extirpation of the uterus, this gravity is enormously increased. As to the medical treatment little need

be said, but there are certain procedures not strictly surgical which are frequently indicated, and may give relief, although not often cure; these measures are stomach-washing, rectal inflation of gas or air and injection of fluids. Klotz washes out the stomach with from four to six quarts of warm salt solution, as soon as symptoms of obstruction appear, and repeats this if symptoms do not subside, adding the second time nearly two ounces of castor oil, which is introduced through the stomach tubes after the second lavage. Rectal injections of water or air may be curative in intussusception, volvulus or in obstruction due to soft adhesions of the lower portion of the intestine, but where it is due to cords or bands they are of no avail. The speaker had seen perforation of the sigmoid flexure produced by passing a rectal tube high up into the colon. The rational treatment is to reopen the abdomen, seek the obstruction, separating the adhesions, breaking up bands or untwisting the volvulus. If the gut is distended by gas it should be incised to let out gas and fluid feces and afterwards carefully sutured. Gangrenous intestine is to be resected and Murphy's button employed. Distention and congestion of the intestine above and its pale, empty flaccid condition below the constriction will often enable the ready finding of the obstruction. To prevent obstruction, Morris proposes covering denuded peritoneal surfaces with aristol. Martin wipes out the pelvic cavity with sterilized olive oil just before closing it. Cases of

so-called paralytic obstruction are usually due to septic peritonitis and operation is rarely of service, although Keen reports a case in which he incised, emptied the intestinal contents, flushed and drained the peritoneal cavity with recovery of the patient.

THE INCISION IN ABDOMINAL SURGERY. BY J. H. CARSTENS.

THE substance of this paper is as follows: With a small narrow-bladed knife make a clean incision through the skin of necessary length, and with another sweep or two cut through the linea alba muscle, etc. Lift the peritoneum with the fingers, open it and enlarge the incision. The use of forceps to lift the tissues or the grooved director, is unnecessary. In closing the abdominal incision use animal ligature, kangaroo tendon or catgut. Bring the peritoneum carefully together with a running stitch, then the fascia and the rectus, if this muscle is incised. Carefully bring together—edge to edge—the tendinous insertion of the oblique muscles. The loose cellular tissue above and fat can be brought together in one or two tiers according to thickness. Bring skin together with buried stitch, thus burying all sutures. Seal with collodion, and, if everything connected with the operation is perfectly aseptic, primary union will take place—the different layers of the abdominal wall will have been brought together as nearly as possible, and no hernia will result. In cases of extensive umbilical, ventral or other hernia, bring

peritoneum together with an over-and-over stitch of kangaroo tendon or catgut. Make a flap-splitting operation of the ring, which is brought together with silkworm gut or silver wire, which are buried, and then the fat and skin are united with the buried animal suture.

Dr. WILLIS G. MACDONALD, of Albany, said he hardly expected to open the discussion on Dr. Carstens' paper, yet there were so many things in it that interested him, and still others that he could not agree with, that he felt compelled to speak. In his introductory remarks the essayist spoke of the fact of ventral hernia following operations for appendicitis. Dr. Macdonald said he could conceive very readily, in cases of relapsing appendicitis, where we have not an active suppurative process, where the demand for drainage is not great, that we may close the wound in the way the essayist had described; but there were other conditions in which we have localized abscess, in which we open the peritoneum, where we have to drain not only with gauze but with rubber. Sometimes we have to introduce into the wound a large iodoform tampon in cases of this sort. The doctor would not say that we could employ this method of procedure by stages. It is in those cases that ventral hernia occur and in which trusses must be fitted. His experience in abdominal surgery is that by far the greater number of herniæ have occurred in such cases as these, and he expects them to occur; he does not know of any way to avoid them. We have to tampon, to

pack carefully, if we have a cavity to drain, to prevent pocketing. In Albany it was not the custom to close wounds by stages; surgeons there had been satisfied with one through-and-through suture. In coming to the meeting with Dr. Van der Veer, and in going over his (Van der Veer's) table of cases for some years back, he finds Dr. Van der Veer has about five per cent. of hernia following his operative work. This, he took it, was a relatively small per cent. The introduction of animal sutures in general surgery was not always so successful as it would seem. He had employed kangaroo tendon and the catgut suture in operations for the radical cure of hernia, and had seen a return of the hernia. It was not at all certain. So far as the buried silkworm-gut suture was concerned, his experience had been equally unsuccessful.

Dr. C. A. L. REED, of Cincinnati, had listened with a great deal of interest to the paper, but the method of closing the wound as outlined by the essayist was far from being a perfect one in his opinion. There were some features of the paper which impressed him as rather confirmatory of the view which he would advance. For instance, the doctor had stated that he used the buried animal suture by layers in his general run of abdominal cases, and yet in his cases of hernia in young subjects, in which the wound is subjected to intra-abdominal pressure, he deems it inexpedient to use it and fortifies his work with the interrupted *en masse* suture. He wished Dr. Carstens

would state by what warrant he assumes, by virtue of the retching which follows anesthesia, that his cases are not going to be subjected to precisely the same pressure, and, further, why he subjects his patients to the risk of a suture in which he finds it necessary to fortify it. It occurred to the speaker that there were strange inconsistencies in the method. The paper itself did not enumerate, except by the slightest inference, what occurs to him to be the greatest danger—the most unsatisfactory result of the buried animal suture. The implication was not involved in the statement that the wound seems to be firmer; it is thicker, it is denser. Dr. Reed believes that the thickened cicatrix means not only a deposit of inflammatory exudate, but the presence of an unabsorbed suture; and if he had contemplated participating in the debate he should have presented cicatrices, painful in character, which he had been called upon to dissect out to afford relief.

Dr. E. W. CUSHING, of Boston, had long observed that there was a tendency for certain processes to come up and be used, fall into “innocuous desuetude,” and then reappear. In regard to the matter of suturing by layers, he believed it was resorted to by Thomas as long ago as 1887, and he had so stated in a paper describing this method read before the American Medical Association in that year. There were two stitches put through everything, in order to bring the wound together and prevent pocketing. The rest was done with the

animal suture and catgut. He thought the use of running suture constricted and strangulated the tissue in a way that the interrupted suture did not. He believed that it is difficult to apply a running suture in such a way that it is not liable to cut off the circulation from certain parts of tissue and cause them to necrose. In two or three weeks the surgeon may have to reopen the wound. Wounds subjected to this suture, according to his experience, did not do so well as under the old-fashioned method of interrupted sutures.

Dr. C. C. FREDERICK, of Buffalo, took positive grounds against the use of buried animal sutures or the buried silkworm-gut suture. He had just operated on a patient a week since for ventral hernia upon whom he had operated last November, it being one of a series of twenty-five cases in which he had used the buried suture in uniting the peritoneum, fascia, and muscle. His experience had been that at least fifty per cent. of the cases have sizable collections of pus along the incision, with abscesses that he had to drain and wash out for a period of one, two, three, or four weeks. As extra support he had used silkworm gut, in order not to bring too much pressure on the buried sutures. The less the tissues are bruised the less necrosis there will be, and the better the union the better the results of the surgeon will be. All his herniæ so far had occurred in those cases where he had used the buried animal suture.

Dr. H. W. LONGYEAR, of Detroit, said he read a paper before the As-

sociation on a similar subject last year at Detroit. He thought the last speaker made an admission which accounted for his bad results in the use of the buried suture. In the use of this suture one of the prime objects was to prevent infection after it had been inserted. In the first place, the wound and suture must be aseptic, and then the wound must be kept so, and this could not be done by reinforcing the buried suture with an *en masse* suture. Dr. Carstens and the speaker had been working together in the Harper Hospital with the buried animal suture for years, and their results were not at first perfect; but their experimental work with it since then had shown that when it is properly buried and sealed, without the application of any extra sutures whatever, the results were better, and this was the only way to get good results.

Dr. REED: What are the relative results in cases of hernia in which Dr. Carstens fortifies the buried animal suture with the interrupted suture?

Dr. LONGYEAR: Dr. Carstens did not say anything about fortifying the buried animal suture with the interrupted suture. You must have misunderstood him. He does not do it, to my knowledge. He said he used the silkworm-gut suture buried. He fortifies the buried suture by the insertion of a buried silkworm-gut suture, and seals the wound with colodion just the same afterward.

Dr. DONALD MACLEAN, of Detroit (by invitation), had listened with great interest to the divergent opin-

ions expressed with reference to the treatment of the abdominal incision, he having had considerable personal experience. He believed that, after all, what is most essential are carefulness and cleanliness of the method. He did not believe that there is such a fundamental difference between the two sides in the debate as there seems to be. It does not matter very much which way or how the incision is closed, so long as the operation is done carefully, thoroughly, and skilfully, and the wound closed in a careful and skilful manner and kept clean. For a long time in his operative work he never thought of closing the wound in layers, as is commonly done now, using the *en masse* suture. He had seen it used very extensively on both sides of the Atlantic, and, so far as he was able to judge, just as good results were obtained in that way as by the other method, although the other method seemed to possess the characteristic of precision, and perhaps there was some anatomical argument in its favor — viz., of bringing and fitting accurately together all simultaneous tissues, tendon to tendon, fascia to fascia, etc.

Dr. TAPPEY, of Detroit, preferred the tier method of suturing. It impressed him as being a very much more exact and thorough method of closing the abdominal incision, and he had practiced it for a number of years. He was not prepared to say that he had never had an abscess following its use. He had sometimes been dissatisfied in the use of kangaroo tendon, for he had found the wound had become infected by the

material, or at least he supposed so. We cannot be too careful in the use of it. It must be kept absolutely clean. Of late he had been immersing his suture material in ether or alcohol and afterward in a bichloride solution. However, it (kangaroo tendon) was perhaps the most useful material we have, if we are only sure of its being aseptic and in a proper condition to use, for in the manipulation of the material it was certainly very much easier than catgut. You tie it, the knot does not slip, and it is not the stiff and irritating material that the silkworm-gut is.

Dr. CARSTENS, in closing the discussion, began by making diagrammatic sketches of his method of suturing. He said if there was any liability of a woman becoming pregnant he did not use the buried silkworm-gut suture, and that he only used it in exceptional cases. It was exceedingly difficult to keep all wounds aseptic; still the surgeon should strive to do so, and success in abdominal and pelvic surgery resolved itself largely into the question of asepsis.

Dr. JOSEPH PRICE, of Philadelphia, Pa., read a paper on

PLASTIC SURGERY IN GYNÆCOLOGY. (ABSTRACT).

To do efficient plastic work in gynæcology a careful study of the anatomy and physiology of the parts injured and to be dealt with is necessary. Just as the scientific understanding of the mechanism of normal delivery has developed the scientific obstetrical forceps under the name of

"axis traction," with the consequent diminution of the accident of labor hitherto observed, so the study of the function of the parts often unavoidably damaged renders their repair a matter of exact science, modified only by the skill of the operator. The mechanism of perineal resistance and fracture is not a matter of chance, and the parts to be restored to function must be replaced in as nearly their physiological condition as possible. A heaving up of tissue here or a splitting there, although simulating a relay of opposing structure, does not necessarily mean strength, and it often happens that the advantage gained is apparent, not real.

Let me, then, insist that in order to mend a perineum intelligently the mechanism of labor must be understood and the lines of fracture appreciated. The perineum does not break haphazard, but always in well-defined lines, save under instrumental violence; and when tears are due to this cause they must be dealt with as lacerated wounds anywhere else. The anatomical fractures due simply to obstetric force and resistance must be mended in the lines in which they occur.

In cases of serious pelvic invasion with accompanying lacerated cervix it is often better or imperative first to do the pelvic operation and to follow this at another time with the cervical repair. I unhesitatingly condemn the plan advised by some to perform internal and external operations at one sitting. Surgery has not for its object the experimental determination of how much endurance the surgeon may

possess, nor of how long the sufferer can stand anæsthesia without collapse. That "enough is as good as a feast" is nowhere truer than in the surgery of gynaecology. There is enough discomfort incident to the surgery of any one or two of the simpler procedures without heaping upon this the pain and danger of an abdominal operation.

Apart from the growing discomforts of neglected perineal and cervical lacerations, it must be remembered that the existence of a damaged and defective perineal structure conduces to future difficult and sometimes dangerous labor by predisposing to failure of rotation of the head.

In reference to injuries of the cervix, it is always to be remembered that serious laceration of this structure is frequently a cause of after-coming malignant disease, or subinvolution, sterility, congestion, and the like, often putting the patient in a condition of chronic invalidism from pain, menorrhagia, dysmenorrhea, displacement and mechanical derangements exhibited in relation with the bladder and rectum.

We have reminded you that perineal tears always occur at certain parts of the perineal structure. Without going into the anatomy of the parts or into a discussion for the reason of this fact, it is sufficient to remember, as each one of us with a practical experience must, that these tears are either lateral, under the ramus of the pubes, or central, extending from vagina toward the rectum. The tears toward the rectum tend to run around it rather than

through it, owing to the differentiation of structure in these two tubes. Now it is to be remembered that the tears of the vagina are always from within outward, from above downward, and that therefore the external or skin operations for perineal lacerations are essentially non-scientific procedures. All operations for the restoring of the integrity of these parts should be done in the lines of their destruction, and therefore *from within outward and from above downward*. When the skin of the perineum is involved, mending of this is merely a cosmetic procedure. The cosmetic element too often predominates in many of the so-called perineal devices.

In examining a perineum to determine whether it has been ruptured or not, a mere ocular inspection will not answer. A central tear is almost always visible. Not so a lateral subramic lacerating. To detect this the finger should be introduced into the vagina, when the laceration will be detected by the fissure caused by the separation of tissue on one or both sides. The early, prompt, and, if possible the immediate repair of these tears is to be performed under surgical rules applicable elsewhere in the body. If the patient happens to be too ill or too weak to endure surgical interference, operation is not to be insisted upon. Discretion is to be used here as elsewhere in deciding cases.

The silkworm-gut with shot is by far the preferable material to be used for sutures. As little tissue as possible is to be included within the

ligature, and strangulation is to be avoided. Early operation precludes the necessity for clipping away even the minutest bit of tissue, and the parts are usually very prompt to heal. When the sphincter ani has been involved, care must be taken to bring the ends of the muscle into apposition. To accomplish this a special stitch is necessary. So far as the method is concerned, it is evident that the one suggested is that of Emmet. His procedure stands pre-eminent among the scientific suggestions and methods of modern gynæcology. Its logic is unassailable and its results cannot be fairly challenged. His work is as delicately true and accurate as an Italian mosaic, while his technique is so simple that to follow it needs only commonplace attention. His demonstration of the scientific value of his method is as accurate as that of any mathematical proposition, and criticism of the ends obtained or of the method pursued arises either from ignorance or misunderstanding.

In old tears the method and lines of denudation, as indicated in Emmet's own book, are unfortunately obscure. This fact Dr. Price believed in a measure explains the reason of the operations having so long been questioned, criticised, and misunderstood.

DR. WILLIAM B. DEWEES.

THE CARE OF PREGNANT WOMEN.
(SEE ANNALS OF GYNÆCOLOGY
AND PÆDIATRY, PAGE 38.)

DISCUSSION.

Dr. J. HENRY CARSTENS, of Detroit: I desire to make a few re-

marks on the paper just read. It seems to me the women who have the easiest confinements, who have the least trouble, do not follow out the hygienic rules laid down and emphasized by the essayist. The poor German or Polish woman in Detroit does not drink any distilled water, but she eats and drinks what she gets, works around the house, and when confinement comes she has no trouble. It is the higher class of women that have trouble. I think we can do a few things. We should impress upon these women the importance of stopping coition during pregnancy; for if we do not we will trouble and a good deal probably have more work for the abdominal surgeon in cleaning out gonorrheal pus tubes than we have now. If we do anything, let us educate these women what to do. Have them understand that as soon as they are pregnant or suspect pregnancy they should call in a doctor, so that he can watch them during the course of pregnancy, examine their urine, pelvis, and take the necessary precautions to prepare them for labor. Another point: we shall try to educate the general practitioners in regard to aseptic midwifery.

Dr. JOSEPH HOFFMAN, of Philadelphia: It is all well enough for those who are connected with medical colleges to measure a woman's pelvis, but if the ordinary general practitioner were to go about with a pelvimeter in his pocket and measure the pelvis of every woman who engages him, he would have to do it in a life-preserver. The question of delivery does not depend so much

upon the size of the pelvis itself as upon the size of the child's head. This is an important point.

With regard to douching, etc., it is my opinion that infection often takes place through the introduction of the dirty fingers of the doctor rather than by auto-infection. Take the history of many cases of confinement that have not the advantage of a clean basin, and not even a piece of soap, in which women deliver themselves; no matter how squalid the circumstances, they come out all right. It is the dirty midwife or dirty doctor that causes the trouble.

Dr. H. W. LONGYEAR, of Detroit: One point I wish to touch upon in the doctor's paper is the subject of albuminuria of pregnancy. It is a subject I have been greatly interested in, as I believe that the ordinary treatment of the condition is inadequate. The essayist spoke of prophylaxis, but did not say very much about the prevention of albuminuria of pregnancy. Prophylaxis does not seem to amount to much in albuminuria of pregnancy when it is present, and I know of nothing that will do much good except emptying the uterus. Purging may be resorted to, but a woman cannot be purged for two or three months, and so the treatment is narrowed down to the one thing: Shall we resort to premature delivery in these cases? The recommendation the doctor gave for examining the urine systematically in all cases of pregnancy is exceedingly valuable. Every pregnant woman should have her urine examined two or three times a month until the end

of gestation. The more I have seen of the fatal results of albuminuria of pregnancy, the more I am convinced that the only safety to the mother is to give her the benefit of the doubt. That I do in its widest sense, and deliver her just as soon as I find albuminuria present. I believe this to be justifiable practice. My plan is to watch the woman, examine her urine from time to time, and when the system seems to be surcharged with urea, as evidenced by certain symptoms, then deliver. I follow the rule. I think I have saved some lives by it. I have found in a good many instances I have been too late when I have done this. We know that the consideration of the life of the child is the main thing that prevents us from doing it early. When we consider that many children are born dead when there has been albuminuria present, or at least die soon after birth, I think the life of the mother should be the first consideration, and in these cases we should induce premature labor as soon as we find albumin, while the mother is in good condition. She will undoubtedly recover promptly from the operation. I do not care whether the child is viable or not. Of course there are some religious reasons why it should not be done, but, as the child is in danger of dying from the storms of eclampsia and uremia during two or three months, I do not believe the religious factor should preclude the induction of labor.

Dr. C. A. L. REED, of Cincinnati: I entirely agree with the view ad-

vanced that these cases should be placed under observation and frequent urinalyses made, with the object of early detecting albuminuria; and if it be true that this condition is not a remediable one, then the position which Dr. Longyear assumes would be tenable. But these cases are curable, and I can see no reason for entering upon a murderous line of tactics simply because a baby is little. The albuminuria can be eliminated from these cases, and the woman can be safely delivered by the resources of our art—perhaps not always. When the fact is demonstrated that the case is not curable, then the proposition relative to the induction of premature labor can be taken under consideration; but the idea that we should at once bring on delivery the moment a diagnosis of albuminuria has been made, as has been suggested, is one I cannot permit to go from this presence without a challenge. A much more conservative plan is in accordance with the spirit of our profession and of our science.

Dr. J. M. DUFF, of Pittsburg: The paper to which we have listened covers a large field, and there are many points I would like to touch upon if time permitted. I congratulate the doctor on the erudition he has shown with regard to the subject of pelvimetry and pelvimeters. I do not think any rational obstetrician carries a pelvimeter around in his pocket daily. It is not necessary in the vast majority of cases that a pelvimeter should be used. The man who attends his cases and carefully

and properly examines them during pregnancy will be able to detect any deformity of the pelvis which may exist, and determine by that examination whether a pelvimeter will be necessary afterward.

With regard to the question of albuminuria, if I understood Dr. Longyear correctly, I regret very much to hear him say that in every case in which we detect albuminuria we should bring on labor. About 20 per cent. of pregnant women have more or less albuminuria, and there is not more than 2 per cent. of pregnant women with albuminuria who have eclampsia. It is very seldom indeed that we have death from albuminuria where there is not eclampsia. I wish to be quoted, further, as saying that it has not been discovered how the different poisons are eliminated from the kidneys, and it has not been positively demonstrated that it is the albuminuria *per se* or uremic poisoning that kills women.

Dr. JOSEPH PRICE, of Philadelphia: If Dr. Longyear were to write to twenty of the most prominent active practitioners in the rural districts or in the mountains, and ask them the number of cases of eclampsia occurring in their practice out of from one thousand to five thousand labors, he would find that it would be less than 2 per cent. But the country practitioner has not

the time to make such researches. Some of the old physicians in the Virginia mountains have had as many as three thousand woman to deliver, and it would be impossible for them, without several clerks, to make correct analyses.

I was pleased with the interesting and scholarly paper, but am sorry the doctor omitted the idiosyncrasies of old women. One of the most serious complications of gestation is the gossip of the old women about maternal impressions. I find perhaps nothing that annoys and distresses the young prospective mother so much as this. They offer suggestions which create all sorts of vicious impressions.

In regard to practical obstetrics, the practice of cleanliness was alluded to, as well as early investigations with the pelvimeter and sounding of the uterus. A distinguished physician, Albert H. Smith, insisted upon early examinations with the pelvimeter and advocated palpation and auscultation, and it was not long before his students were sounding every uterus in town. It seems to me old-fashioned obstetrics has gone out of date.

In regard to cleanliness, I agree with Dr. Hoffman that the same class of old country practitioners I have alluded to are exceptionally clean. In the treatment of their cases they rarely have childbed fever or post-puerperal fever. The other class are filthy.

(To be continued.)

REVIEW OF GYNÆCOLOGY.

GONORRHEAL ARTHRITIS. By DR. O. RESNIHOW. (Centralblatt, F. Gynækol; Review in La Presse Médicale, Sept. 8, 1894.

THE case reported is interesting in the fact that the articulations were attacked before local symptoms were present. A girl aged 19, and who was *without a doubt* a virgin, was married on Jan. 9th and had her first intercourse on the tenth. On the morning of the thirteenth she was taken with pains in the right shoulder and elbow which lasted for two days. On the third day she had chills and fever and the knee was painful. The writer saw the patient on the evening of the sixteenth and found the right knee tumefied, red, containing liquid and very painful on pressure. The other joints were perfectly normal. Examination of the genital organs was negative. On questioning the husband, it was found that he had contracted a clap about five weeks before his marriage and had not treated it, and it was even at this time in the acute stage. The patient remained in bed for two months, the knee remaining the only joint attacked. For the author, this case was one of gonorrheal arthritis, appearing four days after contagion and before gonorrhœa properly speaking. Perhaps the gonococcus more easily infected the organism through the wound of the hymen.

(The cases of gonorrheal arthritis in the female are rare and reviewing

this most interesting one I would like to mention a case that came under my observation when assistant in Geneva. A girl of about 22 consulted us for what was supposed to be rheumatism in the left elbow. There being very little redness or swelling we had no reason to suspect the good reputation of the patient. The arm was put up in a silicated plaster bandage and the patient told to return in two weeks. At the end of that time she returned, stating that all pain had left. The bandage was removed and to our surprise the limb was found *completely* ankylosed. Resection of the elbow was performed by Drs. Kummer and Cumston, resulting in a useful limb. During convalescence the patient developed a severe cystitis which was cured by a systematic treatment. Bacteriological examination of the bone exsected from the elbow gave pure cultures of the gonococcus; the organism was also found in the bladder. C. G. C.)

HYDROCELE OF THE CANAL OF NUCK; OPERATION; RECOVERY.

By Dr. A. J. PATEK. (University Medical Magazine, March, 1894.)

Patient, aged 29, said that two weeks before, a tumor suddenly appeared in right inguinal region and seemed to vary in size at different times, but occasioned only slight discomfort. Physical examination showed a slightly fluctuating oval mass, the size of a small egg, not ad-

herent to skin, passing downward and inward, apparently below Poupart's ligament and outside of the pelvic spine; mass was somewhat tender, freely movable in the line of its long axis but could not be lifted from underlying tissue. No distinct impulse in coughing. Percussion at times elicited tympany, at others dullness. Symptoms indicated incarcerated femoral hernia. Incision was made over tumor which, when carefully dissected down upon, was covered with a thin membrane resembling the peritoneum. The tumor looked like a cyst and when dissected from its attachments and followed up along its long axis, its bulk was found to narrow down to a stalk issuing from the inguinal canal. The wall being nicked, a serous fluid escaped. The sac was treated and operation terminated as in hernia. Patient left cured in four weeks.

A NEW MEANS FOR FACILITATING MANUAL REDUCTION OF UTERINE RETRODEVIATIONS. By DR. BATAUD. (Congrès de l'Association Française pour l'Avancement des Sciences; review in *Le Progrès Medical*, Sept. 1, 1894).

Manual reduction is most difficult in certain cases of retrodeviations, either with or without adhesions, but in which the uterus is elongated, more or less limp in the middle part and so flexible at the isthmus that pressure exercised on the accessible part of the cervix is not transmitted to the corpus which remains wedged down and stationary. In these cases, the writer inserts a little rod covered

with cotton into the uterine cavity, by means of a special forceps. This simple means renders the entire organ rigid and manual reduction is made most easy. The use of this instrument is simple and without danger if the technique of the writer is followed.

RECURRENCE OF SARCOMA OF THE BREAST. By DR. HOFFMANN. (*Arch. J. Klinisch, Chirurgie*, 1894, vol. XLVIII).

A woman, aged 42, was operated on in Dec., 1886, for a fibro-sarcoma of the breast, which reappeared twelve times in three years, the twelve tumors were removed as soon as they appeared. From Oct., 1889, to July, 1893, nothing was noted, when in August, 1893, metastasis in the brain, abdomen and limbs occurred with death of patient in a few months. This case is interesting in the recurrence of the growth so many times in three years and the interval of three years during which nothing appeared.

THE TREATMENT OF CYSTITIS IN WOMEN. By DR. LUTAUD.

The etiology of cystitis in the female is different from the affection in the male. The uterus in the female acts the role of the urethra and prostrate in the male. Traumatism from labor or an operation produce cystitis in women and even a very slight cause, such as a tampon placed against the cervix, has been known to produce a very painful tenesmus. *Acute cystitis*. The first indication is to relieve pain, especially by local

applications. The following suppositories are much praised by the writer.

R Morphin. hydrochlor.
 Cocain. hydrochlor., aa 1 centigramme.
 Ext. belladon., 5 milligrammes.
 Ol. theobrom., 3 grammes.

M. F. supposit., No. 1.

Sig.—One suppository every four hours until pain has ceased. Belladonna may be replaced by hyocyamus, when morphine or the opiates are badly supported by the patient. This formula is good:

R Cocain. hydrochlor., 1 centigramme.
 Ext. hyocysain., 2 centigrammes.
 Ol. theobrom., 3 grammes.

M. F. supposit., No. 1.

Sig.—Three or four suppositories in twenty-four hours.

An opiate enema, laudanum preferably, is also most useful. When there is insomnia the writer prescribes chloral, always in enema at the minimum dose of 4 grammes for an adult woman as follows:

R Chloral. hydrat., 4 grammes.
 Vitel. ovi., No. 1.
 Ag. dest., 150 grammes.

But an injection hypodermically of 1 centigramme of morphine is the surest manner of calming the paroxysm of vesical pain on the condition *that the patient is never allowed to inject the remedy herself*. Poultices, sitz baths, fomentations over the hypogastrium are useful adjuncts to local treatment, which according to the writer are to be preferred to general treatment during the acute stage. Topical and calming applications may also be applied in the vagina and the author prefers this method to all others when there is cystitis of the neck. Belladonna or cocain or the following is employed:

R Ung. camphor, 30 grammes.
 Ext. belladon., 2 grammes.

M. D. S. A tampon is smeared with this ointment and changed night and morning. When pain is severe, a small tampon wet with the following solution is introduced in the vagina.

R Cocain. hydrochlor., 1 gramme.
 Ag. dest., 20 grammes.

Treatment by internal remedies should not be resorted to during this stage and apart from the hypnotics there is nothing else to suggest. The writer has never had any results from the use of the balsamics. Oxalic acid so much praised for cystitis in man has never given the author any marked results in women, especially during the acute stage, he says however, that he has seen the pain ameliorate by a prolonged use of the following mixture:

R. Acid oxalic, 50 centigrammes.
 Aq. dest. 100 grammes.
 Syr. cort. aurant, 30 grammes.

M. D. S. A soup-spoonful every four hours.

Chronic cystitis. In the chronic state the author employs both local and general medication. When the inflammatory and painful symptoms are better, intra-vesical irrigations may be resorted to. A perfectly aseptic gum or glass catheter is introduced into the bladder while a syringe is inserted into the free end. The following is the author's formula for solution for irrigation:

R. Acid. borac, 40 grammes.
 Sodae biborat, 5 grammes.
 Ay. dest. 1 litre.

The liquid is pushed quickly into the organs so as to produce a rapid jet and the syringe is withdrawn to allow the liquid to escape. He advises not to inject more than 50 grammes at a time and when the bladder is irritable 30 grammes is enough to commence with. The writer thinks that nitrate of silver is too irritating for the female bladder and uses iodoforme, whose action is more efficacious, especially in gonorrheal cystitis; he proceeds in the following manner. The organ is washed out with the above boracic acid solution and then an injection of a 150 grammes of tepid water to which a teaspoonful of the following formula has been added, is made :

R Pulv. iodoform,	30 grammes.
Glycerine,	40 grammes.
Aq. dist.	20 grammes.
Gum. adragant.	25 centigrammes.

Pyoctanin blue has been proposed by Mencki, of Varsovie, in gonorrheal cystitis, but alike all other injections, it should only be employed in women in the chronic form of the affection. The writer has had success with the following :

R Pyoctanin.	1 gramme.
Aq. dist.	1 litre.
M. D. S.—For injections	night and morning.

These injections should be continued for 10 or 15 days if they are well borne by the patient. General medica-

tion is useful in chronic systitic. Pichi which was used by Wyman about ten years ago, has been employed by the writer in gonorrheal cystitis in women with good results as follows :

R Ext. pichi,	10 grammes.
Tinct. cannab. indic,	2 grammes.
Aq. dist,	90 grammes.
M. D. S.	A soup spoonful every four hours.

Here is another formula in which buchu is combined with hyocyamus and bromide of ammonium :

R. Ammon. bromid,	10 grammes.
Tinct. hyocyam,	5 grammes.
Ext. buchu fld,	10 grammes.
Aq. dist,	60 grammes.
M. D. S.	A teaspoonful every four hours.

If there is pus in the urine, Lutaud prescribes :

R. Acid benzoic,	1 gramme.
Aq. fld. aurant,	50 grammes.
Aq. dist	900 grammes.
Sacch. alb,	100 grammes.
M. D. S.	To be taken by glassfuls between meals.

Lastly, it must not be forgotten that cystitis may be of tuberculous origin, that it may be due to a calculus or kept up by tumors in the neighborhood of the bladder, the treatment consequently should be directed to these different lesions. (*Revue Obstetricale et Gynecologique* Aug 1894.)

C. G. C.

BOOK REVIEWS.

A SYSTEM OF LEGAL MEDICINE.
By ALLAN McLANE HAMILTON,
M. D., and LAWRENCE GODKIN,
Esq., and others. To be complete
in two octavo volumes. New York,
1894: E. B. Treat, 5 Cooper
Union.

For many years there has been no new work on legal medicine, either in the French, German, or English languages. The standard treatises of Briand et Chaudé, Hoffmann, Taylor, Casper, Tardieu, Tidy, etc., have held their place, but a decided want is felt for a complete and recent work on this important branch of medicine. All progressive physicians and surgeons should be well read in medical jurisprudence and if this were the case the profession would be much better prepared to appear in court, and more weight would be given to their evidence were they versed in the legal aspects of their profession. The first volume of a System of Legal Medicine that we have before us, is a proof that there is to be a work on the subject, that every practitioner should have in his library.

In the United States little has been written on this branch and the trans-Atlantic works have been consulted, but on account of the vast difference existing in the practice of medicine, legally considered, they are in many respects inapplicable to our methods and not in conformity with the legal usages of this country. The list of the distinguished contributors to this

splendid work is too long to give, but *en passant*, let it be said that they are all celebrities of the medical and legal professions and are adequately fitted for their work. In the first volume we find the following subjects treated: Medico-legal Inspections and post-mortem examinations, death in its medico-legal aspects, blood and other stains, identity of the living, identity and survivorship, homicide and wounds, poisoning by inorganic and organic matters and alkaloïds, toxicology of ptomaines and other putrefactive products medical jurisprudence of life insurance, accident insurance, the obligations of the insured and the insurer, and the legal relations of physicians and surgeons to their patients, etc., and lastly a chapter on indecent assault upon children. The volume is illustrated by eight plates and a number of figures. Among the many features worthy of note, we would mention Bertillon's measurements and his descriptions of physical appearances which are fully described and it is to be hoped that, by instructing the medical profession in the theories and the technique of this great French scientist, scientific work may be done in our jails and prisons for the benefit of humanity, as is now done in France. Too much praise cannot be said of the first volume of the "System," and we await with pleasure the second which is to appear shortly.

ORTHOPEDIC SURGERY; A MANUAL FOR STUDENTS AND PRACTITIONERS. By JAMES K. YOUNG, M. D., Instructor in Orthopedic Surgery, University of Pennsylvania. Philadelphia, 1894: Lea Brothers & Co.

This volume of 446 pages is intended as guide to Orthopedic Surgery for both students and practitioners. The work is based largely upon personal experience, but old as well as new literature of its subject has been consulted by the author in order that the volume might be complete and up to date. The subjects are treated in order as follows: Pott's disease, sacro-iliac disease, hip joint disease, ankle joint disease, diseases of other major articulations, diastasis, ankylosis, synovitis, lateral curvature of the spine, infantile spinal and cerebral paralysis and others, torticollis neuromimesis, spinal and cerebral arthropathies, rickets, knock-knee, curvatures of the diaphyses, tardy hereditary syphilis of the bones, arthritis deformans, Dupuytren's contraction, talipes, congenital dislocations of the hip and perverted development. We remark that the author has given at the head of each chapter the synonyms in the English, French and German languages, a feature which we think most excellent and we find that with a great many exceptions in the French, they are correct. The work is on the whole very good, although certain points in pathology

might, we think, have been more completely treated. The treatment is especially well written upon and the chapters on the different paralyses are most excellently dealt with. The author has fully illustrated his work with figures from Hoffa, Davis, Bradford & Lovett, Gray and others, and a number of original ones. Messrs. Lea Bros. & Co. have done their share in making the work most readable on account of the excellent type and paper. The work will no doubt be a success, as it deserves to be.

TRANSACTIONS OF THE MEDICAL SOCIETY OF THE STATE OF NEW YORK, 1894. Published by the Society.

This volume contains, as usual, a most interesting series of papers, numbering in all 45, but to give the titles of them all would take too much space. A short mention of the contents will suffice, as they should be read in order to be appreciated. Three principal subjects were brought up. First, abdominal surgery, this being treated of in many points concerning diagnosis, pathology, technique, etc. Second, menstruation, normally and pathologically considered, was discussed *in extenso*. Third, diphtheria, which elicited many interesting memoirs concerning its diagnosis and treatment, both medical and by intubation. Many other interesting papers on various subjects complete this most excellent volume.



RESULTS OF OPERATIONS FOR INTUSSUSCEPTION,
By Dr. Howitt. (See next page.)

ANNALS

—OF—

GYNÆCOLOGY AND PÆDIATRY.

DEPARTMENT OF PÆDIATRY.

Remarks Bearing on the Surgical Treatment of Intussusception in the Infant. Two Successful Cases.¹

BY HENRY HOWITT, M. D.,
GUELPH, ONT.

The term infant, as used in this paper, is employed in a modified sense, being restricted to the nursing epoch of life, or, more definitely, to the child under one year of age.

Intussusception plays an important role at all periods of life in the causation of intestinal obstruction. According to Treves and Leichtenstern, when we class all varieties of bowel obstruction together, it forms more than one-third the whole number. The same and other excellent authorities aver that no less than one-fourth of all cases of intussusception occur during the first year of life.

Although as a rule, the diagnosis of it in the infant is not by any means difficult, few, who have given the matter attention, will differ from me when I state that more instances of the malady are overlooked in early

infancy than at any other age; and a review of the literature pertaining to it compels one to believe that when the subject is better understood, especially by the general practitioner, the above estimate of its frequency will be found to be below the mark. At this age the flaccid condition and the loose attachment of the mesentery, the proneness on slight irritation to irregular intestinal muscular action, and the common occurrence of catarrhal affections in the alimentary tract, probably account for its greater frequency than at other periods of life.

Taking all forms of intussusception together, the general mortality is 70 per cent; but, if we confine our observations in this line to the infant at the breast and exclude professional assistance, the mortality percentage leaps with a bound to almost, if not to, 100 per cent. Ordinary treatment,

¹. Read before the American Association of Obstetricians and Gynæcologists, Toronto, 1894.

including mechanical distention of lower bowel with gas, air or liquids, does not materially affect the death rate.

This calamitous outlook is ascribable to the act that in infants, as a rule, to which there are few exceptions, the invagination is so acute that the efforts of nature are powerless, and, after the lapse of a few hours, ordinary measures of treatment cannot succeed on account of the œdematous and other changes in the intussusceptum. At other ages spontaneous reduction of the displaced bowel and spontaneous elimination of the portion causing the obstruction are factors to ward off a fatal termination; but here, in at least the recognizable cases, spontaneous reduction never takes place and elimination only in 2 per cent.; even then it does not by any means indicate recovery.

If we exclude the extremely uncommon varieties, and the pseudo ones, which happen immediately before death, in brain and other diseases, the invagination found is either ileo-cæcal or ileo-colic, the former is generally, and the latter, in my opinion, always beyond the reach of any treatment short of cœliotomy.

It is impossible to differentiate during life between the two varieties, nor will even inspection on exposure of the involved portion of bowel before reduction reveal which of the two varieties you have; for the reason that in the ileo-colic variety, shortly after the lower few inches of the ileum became prolapsed into the cæcum, the tenesmic efforts induced force the cæcum into the colon, and its after

course exactly resembles that of the ileo-cæcal.

Now, it is not difficult to understand that by trusting to distention of colon by gas or liquids, a serious mistake may be made. For example, in a given case the distention may reduce the cæcum and portion of colon involved, while the most important and acute part of the invagination, the prolapsed end of ileum, remains, and on account of its small size is apt to escape detection, and thus lead to false security, which is very sure to be disastrous. Reduction by distention of colon, if admissible at all, should only be attempted in the early hours of the attack and in the absence of marked tympanites. If used early it does not exclude in event of its failing an operation afterwards, but if employed later, or when the abdomen is distended with flatus, it is liable either to rupture the intestine, or lead to arrest of respiration from pressure on the diaphragm; the latter alarming accident, as will be seen below, happened twice in one of my cases.

I am fully aware that the leading authorities on the subject more or less strongly advise repeated and prolonged trials at disinvagination by distention and taxis; at the same time it is my firm belief that just so long as the advice is followed by the profession, the mortality will remain, as in the past, appalling.

To my mind, in the whole line of modern surgery, with its vast strides on the road to light, there are few human ailments which demand more prompt surgical aid than do the ma-

jority of these cases ; and, under favorable circumstances, there is little valid reason why in competent hands the mortality should be greater than the average major operation. Moreover, the operation is an ideal one, being restorative and free from mutilation, and its successful accomplishment fulfills two of the noblest aims of our profession — the alleviation of pain and the prolongation of the sum of human life.

At the annual meeting of the Ontario Medical Association in June, 1889, I read a paper on "Miscellaneous Laparotomies" which was shortly afterwards published in the *Canadian Practitioner*. The article contained a brief and hurriedly-written report of my first operation for intussusception in the infant. In part from it, but chiefly from my notes taken at the time, allow me to state the following facts in regard to the case, namely :

The exact age of patient, a male child, was at the time of operation 2 months and 28 days. He had had, though fairly well nourished, almost constantly from birth, considerable catarrhal irritation of bowel, manifest by frequent loose stools, often containing mucus tinged with blood.

The onset of intussusception in this case was sudden, being announced by an unnaturally piercing cry, which was soon afterwards followed by paroxysmal attacks of colic, accompanied with vomiting and tenesmus. Blood and mucus were passed, but no fæcal matter nor gas. A dose of castor oil, administered by the mother, aggravated symptoms, especially the vom-

iting, which now (a very unusual occurrence in infants) became stercoreaceous. After this he refused the breast ; in fact to swallow anything. The paroxysms of pain continued to grow more frequent and prolonged, and the intervals of freedom less. No medical man saw the case till the afternoon of the second day, when he was carried to my office. The child was then in a very critical state, temperature 102, pulse 135, and abdomen greatly distended. During the paroxysms he, now, owing to weakness, merely moaned in a piteous manner. An oval lump was detected in right side a little above line of umbilicus, which was extremely *tender to touch*.

Under complete chloroform, narcosis with pelvis elevated, the distention method, aided by taxis, was tried, but when a pint or more of liquid had been forced slowly into the bowel the child suddenly ceased to breathe. Escape of the fluid and artificial respiration accomplished our aim — resuscitation. Believing at the time that this untoward event was due to careless administration of the anæsthetic, another attempt at disinvagination by the method was made, but the result, except more alarming, was the same. On examination, after second resuscitation, the lump was so much smaller in size that its detection by hand externally was very difficult ; and it occupied a lower position in the side.

With as little delay as possible an abdominal section was made. The incision extended in the median line from half an inch above the umbilicus downward as far as the bladder

would permit. No attempt was made to prevent escape of the distended coils of intestines, nor could this have been successfully accomplished. On the contrary, eventration was hastened by hand until the invaginated portion came into view. It was easily brought out through the incision. The exposed intestines were protected by suitable cloths wrung out of hot water, applied in layers, the outer of which were changed frequently. The intussusception proved to be the lower three or four inches of ileum prolapsed through the ileo-cæcal valve. The cæcum and colon were collapsed, and the former and the greater part of the ascending portion of the latter presented unequivocal evidence of having recently been involved in the invagination. No doubt the reduction of them had been brought about by the previous efforts in the way of distention.

The prolapsed part of ileum proved by far to be the most difficult step in the operation, and it refused to yield until a plan similar to that commonly advised for paraphimosis was adopted. Immediately after relieving it, some gas and liquid contents of upper bowel entered colon, and in a few minutes flatus was expelled from the rectum. The passage of contents of small intestines into large was helped by gently grasping the former between two fingers and running them along it towards the colon in such a manner that they were forced through the ileo-cæcal valve.

The bowel that had been involved in the intussusception was dark in color, cedematous and in

places furrowed. On the ileum close to the cæcum, and again four inches from it, there were clear indications of ruptured adhesions and several small abrasions of the peritoneal coat.

When the intestines were replaced, the wound was quickly closed with silk-worm sutures, which included all layers and a continuous, superficial one of silk.

My notes do not tell how long it took me to complete the operation, but they do show that within two and a half hours from the time the child entered my office, I was sitting by his cot at the Guelph Hospital, and hearing explosions of flatus. In a less interval of time after the operation, his bowels moved freely. He had no more paroxysms of pain, nor did he even vomit. Took the breast several times before morning. On the second day his temperature was normal. Recovery was rapid, and his mother took him home before the end of the second week. Date of operation, 4th of July, 1888.

After the operation he was entirely free from his old complaint, dysenteric diarrhœa. I am sorry to relate that, in the early months of his fifth year, he contracted diphtheria and died.

My second operation for intussusception in an infant took place last Spring.

Frank L., born October 25, 1893. The child from birth till he entered his fourth month had been fat and rugged; after this, up to time of operation, was troubled with frequent passages of loose stools, and also in-

clined to vomit what he had nursed more than he formerly did. The motions were in other respects natural, and the act of defecation free from pain and tenesmus. Although his weight fell off a little, he was still a fairly well nourished child, and was neither ill-tempered nor restless.

On the morning of the 20th of April, his mother carried him out for an airing; on her return she nursed him and he slept quietly for two hours. When he awoke, his sister rocked his cradle and otherwise amused him. Suddenly he gave an agonizing scream and apparently fainted. When the mother, who ran immediately to his cradle, picked him up, he was pale and limp. The surface of the body became cold and covered with a clammy sweat. A hot bath, mustard plaster and friction were resorted to; then after considerable time the child vomited and reaction slowly commenced, and, as it became established, paroxysms of pain came on, accompanied with further vomiting and tenesmus. During these attacks, which were becoming more frequent and severe, the child writhed and screamed.

About two hours after the commencement, a medical man from a distance who happened to be in the village where the parents resided, was requested to see the little one. The doctor, after an examination, remarked that the temperature was normal; still he feared the patient had a touch of inflammation of bowels. He gave an anodyne mixture and ordered a dose of oil and hot applications to abdomen: the oil to be re-

peated in five hours if necessary. An hour after the doctor left, the mother gave an enema, and dark blood slime and a little faecal matter came away. The oil was repeated in five hours, but it only increased the straining efforts and the amount of blood and mucous, but except these no bowel movement occurred. The anodyne mixture, which was frequently repeated, by evening relieved the pain, and quieted very much the tenesmic efforts. The child slept occasionally during the first part of the night, but after midnight the medicine seemed to lose its effect, and in consequence the intermissions between the paroxysms became shorter as time advanced. He nursed frequently, but always vomited it, and occasionally a yellowish colored material.

On the following day the parents became alarmed and called in their family physician, Dr. Robinson, of Guelph, who arrived at noon, about twenty-four hours after the commencement of the attack. The doctor at once correctly diagnosed the true condition of affairs, and, beside the symptoms given above, made a note of the following, namely: Temperature 104, pulse 140, face pinched with anxious expression; except a little fulness in lower abdomen, no tympanites, and the presence of a lump in right iliac region, deeply seated and only reached by firm pressure, which caused much pain.

When the doctor returned to town, he related the history of his case to me, and I concurred with the diagnosis. The result was that his child arrived at the hospital at 5 P. M. that

day. He was now so extremely low that I became chicken-hearted, and refused to attempt any active measure of treatment until urged by the parents, who said that no matter what the result might be, no blame would be attached to us. They also added that on the way from home they hardly expected him to reach the hospital alive.

Meanwhile preparations had been completed to carry out Senn's plan of disinvagination by rectal insufflation of hydrogen gas, and in event of its failure to perform a cœliotomy. Palpation of abdomen under chloroform on the operating table revealed the lump by this time to be high in right side; in fact partly under the ribs.

Although we had Senn's apparatus, as supplied by Shores & Co., of Milwaukee, the gas failed to have any effect whatever. I admit it is possible our manner of using it may have been defective.

A three-inch incision was now made in the median line, through which a large portion of the small intestines were drawn out and protected, as in my first case. The evisceration allowed me in less than a minute to reach the seat of invagination and to bring it into view.

To the eye the ileum appeared to enter the right extremity of the transverse colon, with an enlargement of the latter commencing at the junction of the two, and extending along the large bowel for three or four inches. Consequently the lower portion of ileum, cæcum and ascending colon were invaginated.

Now came the difficult step in the

operation, and which, excluding that spent in the attempt to relieve by insufflation, occupied more time than all the others. After failure by repeated trials of different methods, I was seriously considering whether to resect the part, or to exclude it from the faecal circulation, by making an anastomosis with a Murphy button between the ileum above the obstruction and the transverse colon below, when, pressure being made on the apex of the intussusceptum while the intussusciens near the neck was pulled in the opposite direction, it yielded, slowly at first, then suddenly gave way. The parts were œdematous, furrowed and dark in color. The œdema made the coats of the cæcum nearly a quarter of an inch thick, and, owing to the same condition, the end of ileum for two inches to touch felt solid. On the colon, near what had formed the neck of the intussusception, were patches of abraded peritoneum; one on the outer side was larger than a 25-cent piece, which bled quite freely for a few minutes. The affected gut was irrigated and returned to the abdomen. It was now fortunately observed that the distended ileum had not emptied itself into colon. The bowel was brought out again, and an examination led to a pull being made on the ileum, when something appeared to yield and the obstruction at this point was overcome. By running the fingers along the ileum toward the colon, the distention of small bowel was soon completely relieved. All the intestines were replaced, the omentum spread over them and the wound closed.

The child did not vomit after the operation, nor, in short, had he a single bad symptom. The bowels moved the same evening. From the first day he could not have felt much pain, for when awake and lying on his back he spent much of the time in endeavoring to put first one and then the other foot into his mouth. His parents took him home on the eighth day. Although he recently has had an attack of scarlet fever, he is to-day a rugged and healthy child.

What to me appears worthy of note is the fact that in both cases the operation evidently did more than relieve the obstruction. The chronic and troublesome irritability of bowel at once and permanently ceased after it was done, though in the one the diseases had existed from birth, and in the other for fully two months. This should lead one to infer that possibly the cause of the irritation had its commencement in the peritoneal coat.

I have photographs of the patients: No. 1 taken thirteen days, and No. 2 four months after operation, which in each case fairly well shows the site and extent of incision.

In order to emphasize the importance of noting the sudden and severe nature of the initial symptoms in a diagnostic point of view, to show the lump cannot always be detected and also to make known the possibility of an operation being successful as late as the fourth day, the following brief notes are given:

About the middle of July, 1893, in consultation with a medical friend, I saw a case on the third day of the

attack, but could not induce the family to allow an operation. The child, a male, aged five and a half months, had never previously been ill. The onset occurred suddenly during sleep, causing the infant to awake with a scream. He then turned pale, and the surface of his body became cold and clammy. Reaction was followed by the usual symptoms. At the time I saw him the abdomen was distended and no lump could be detected.

Death took place on the fourth day, and a post-mortem examination verified the diagnosis and revealed that the lower end of ileum, the cæcum and all the colon to the upper end of the descending portion were invaginated. The distention of the small intestines had forced the part upwards and backwards so that it pressed against the left kidney. This accounts for the reason why the lump had not been felt during life. There were no noticeable adhesions, nor any evidence of sloughing, and reduction was easily accomplished by merely pulling the ileum.

I will now present to you for consideration and judgment, a few remarks and suggestions, the knowledge of which, in my opinion, is important, if not to some extent necessary, in order to obtain success in the treatment of invagination in the infant by surgical means.

1. The diagnosis in infancy is not difficult, for the reason that obstruction of bowel by any other cause is extremely uncommon, and when it does exist is sure to be owing to congenital defects, or as readily recognized

ailments. The sudden and pronounced nature of the onset, the presence of more or less evidence of shock, followed shortly by vomiting, paroxysmal colic and marked tenesmic efforts, which give rise to non-fæcal passages of blood and slime in a child previously healthy, or who has a catarrhal affection of bowel, render the diagnosis for all practicable purposes complete. If in addition to these we can detect an oval tumor in line of colon no room for doubt is possible. In consequence of the pliable condition of abdominal walls at this early age, a lump the size of a pigeon-egg can, in the absence of tympanites, be readily felt by the educated hand.

2. The operation should be performed early, and not when the powers of life are ebbing away. Within twenty-four hours of the commencement of attack, and in the absence of marked tympanites, an attempt at reduction under chloroform probably should be made by distention and taxis; but this trial should be neither forcible, prolonged nor repeated, and, failing, an abdominal section should immediately follow. In the second day and later the operation should be done without a moments unnecessary delay. The operator should have a practicable knowledge of the details of æaptic surgery as applied to abdominal work.

3. The incision should be made in the median line, either above the umbilicus or lower, according to position of lump. When the tumor cannot be defined, let the middle of incision be at the umbilicus, for through this, the part after eviscera-

tion, no matter where situated, may be reached and brought into view. The wound need not be more than from three to three and a half inches in length. The pliable nature of the abdominal walls and the smallness of cavity render complete exploration with fingers quite easy.

4. Evisceration will be found not only to save time, but to aid very much in facilitating the after steps of the operation, for it allows more room, and permits the large bowel to be readily brought out. I differ from those who state that it is more dangerous to expose the intestines in infancy than later in life. The eviscerated contents of abdomen should be protected by suitable cloths wrung out of hot water and applied in layers, the outer of which are changed when necessary; or the heat maintained by irrigation with water at a temperature of 92 degrees.

5. Reduction is probably best accomplished by making pressure on the apex of the intussusceptum, while at the same time the intussuscepiens are pulled in an opposite direction. In some instances it is better to break with a probe or other instrument the adhesions at neck, and then to make firm pressure on the intussusceptum by grasping the whole mass with the hand before an endeavor is made to reduce it.

6. Before the reduced portion is returned to abdomen the operator should not only demonstrate that the obstruction has been completely removed, but should also empty the contents of ileum into large bowel. The last may easily be done by gently

stroking the ileum downwards with a soft sponge, or after the fashion adopted in my operations. The removal of the material from above the place where the obstruction existed performs important work for an organ, the function of which is sadly impaired; and it also greatly hastens the expulsion of offensive and septic matter from the body.

7. The replacement of the small intestines may be facilitated by the surgeon and assistant hooking two fingers of their left hands into opposite sides of the wound, and then lifting the lower portion of body from the table. Should the intestines be unusually distended with gas, it is my opinion that there is no objection to multiply punctures with clean hypodermic needles.

8. A point which also applies to most abdominal operations is rearrangement of omentum. By spread-

ing the omentum over the bowels, it certainly prevents adhesion of the gut to the line of incision. The lymphatics of it are admitted to be endowed with more than ordinary power of absorption, and by extending to seat of impairment may in no small measure prevent trouble. The omentum may also haply become attached to a weak point on the affected portion of bowel, and thus be an agent in preventing perforation.

9. The wound should be sealed in such a manner that the urine of the child cannot possibly reach it.

In conclusion, allow me to add that, in all, six cases of intussusception have come under my personal observation, four in the infant and two in the adult. Three were treated by abdominal section and recovered, and three by non-operative means, with one result — death.

REVIEW OF PÆDIATRY.

ANTISEPSIS IN MEASLES. BY DR. BELLOIR.

The following is the treatment as to antiseptics, carried out in the service of Dr. Siredey. It is well known that the principal danger in measles is secondary infections produced by the micro-organisms of the buccal and naso-pharyngeal cavities, causing the classical complications of bronchopneumonia and stitis. To avoid these, Dr. Siredey orders all his cases of this

disease to undergo a systematic irrigation of the above named cavities with a very dilute antiseptic solution such as corrosive sublimate at 1-10000, permanganate of potassium at 1-5000 or one of the following solutions :

R	Thymol,	15 centigrammes.
	Acid carbolic,	5 grammes.
	Aq. pont.,	1 litre.
R	Mophtol B	20 centigrammes.
	Aq. font.,	1 litre.

(*La Presse Medicale*, Sept. 8, 1894.)

HYSTERIA IN YOUNG BOYS. A CLINICAL LECTURE DELIVERED BY DR. SIMON.

Hysteria in boys is sufficiently frequent that it should be seriously considered in cases presenting abnormal nervous symptoms. The author mentioned the following cases. The first, a boy aged 12, who had a paraplegia of six weeks duration. He was taken with sharp pains in the knees with flexion of the leg on the thigh and some one said before him that he would never be able to walk. This produced a deep emotion and from the following day he could not walk. Dr. Simon concluded after examination of the case that it was one of hysterical paraplegia and announced that a cure would be effected in fifteen days, and by this suggestion cure was complete after that lapse of time. In this case the cause was the great emotion produced on a soil prepared by a particular condition of the cerebellum. The second case was a boy about the same age as the first patient, who was sent to the hospital at Berck for some slight ailment. He was greatly moved at the sight of the different apparatus for the sick and the patients and one day arose with a severe pain in the thigh, which lasted for some time and simulated a coxalgia. He was sent home walking with crutches. Dr. Simon saw the child and had suspicions as to the nature of the case and tried suggestion as above with result that the crutches were abandoned and all pain soon disappeared. These pseudo-paralytic or painful symptoms are very common in the hysteria of

young children, but more rarely. queer movements may be observed whose nature it is difficult to explain; the author mentions two cases aged about nine years, who entered his service and whose arms were in a state of singular contractions like a mill-wheel. One of these patients was cured after having a sharp pain, the other was put in with his companion and soon was cured by imitation. Other interesting, but similiar cases and cures are reported. For treatment the bromide of potassium does not work well. The root of valerian in infusion is more useful. The valerianate of ammonia may also be given for 15 days; belladonna, camphor or hyoscyamus are fairly good. The author advises not to employ iron or nuxvomica, they being generally contra-indicated. (*Journal de Med. et de Chir. pratiques*. Sept. 10, 1894).

TREATMENT OF FEEBLE HEART DURING INFECTIOUS DISEASES IN CHILDREN. BY DR. SEVESTRE.

When the heart is weak during an infectious disease and to avoid collapses when the cold bath is used the author employs caffeine, either in subcutaneous injections of 20 centigrammes, twice daily or in a potion composed as follows :

R Caffeine.
 Sodæ benzoat aa 1 gram. 60 centigram.
 Syr. Tolut. 50 grammes.
 Spt. vini gall. 10 grammes.
 Vanillin. 5 centigrammes.
 Aq. dest. 60 grammes.
 M, D. S. A tablespoon twice daily.
 (*La Presse Medicale*, Sept. 22, 1894)

ANNALS

—OF—

GYNÆCOLOGY AND PÆDIATRY.

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No. 2.

Report of Four Cases of Appendicitis Surgically Treated in Thirty-seven Consecutive Hours.

BY G. S. PECK, M. D.,

Consulting Surgeon, Youngstown City Hospital.

YOUNGSTOWN, O.

Within the past few years many articles have appeared in the various medical journals concerning the diagnosis and treatment of appendicitis, and while the views regarding the symptomology and diagnosis of the disease have become almost fixed, the same can not yet be said of the treatment, concerning which there are many and widely different ideas. These differing opinions, however, do not reflect discredit or inefficiency upon any of the various classes of observers, but rather indicate a lack of statistics, which eventually alone should determine which plan of treatment is the safer to follow. I myself believe that we obtain the best results from the early surgical treatment.

The cases which I intend to present at this meeting are of different char-

acter and type, though all were treated surgically, with results as you will notice. But believing that there might be advocates for a different treatment than that pursued, you have my apology for presenting a paper on a subject so frequently discussed, though at present lacking, I believe, sufficient statistics from which to draw more definite conclusions.

CASE I.

Operation during interval between attacks. Obstruction of bowels on sixth day. Second operation. Recovery.

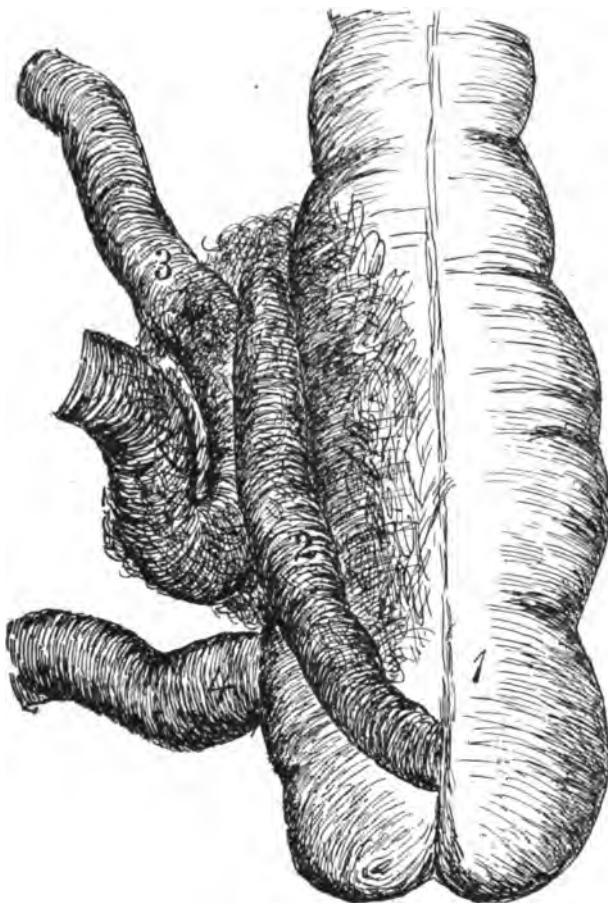
Miss L. H., single, age 26 years, residence, Warren, Ohio, was referred to me for examination by Dr. T. M. Sabin, July 19, 1894. The following brief history was obtained: In the early part of May, she had an

1. Read before the American Association of Obstetricians and Gynecologists, at Toronto, Sept. '94.

attack of appendicitis, lasting some three weeks, during which time she was very ill; an operation was suggested, but, on account of a sudden favorable change, all operative procedure was postponed, and she was

in regard to operative treatment. Upon our advice she entered the Youngstown City Hospital, July 23d, 1894, and after three days thorough preparation, at 11 A. M., July 26th, assisted by Drs. Zimmerman and

I. APPENDIX IN SITU. VIEWED FROM POSTERIOR.



1. Cæcum.
2. Appendix, held beneath ileum and cæcum by adhesions.
3. Ileum, three feet above its terminus 4.

advised to have the appendix removed in the interval between attacks. I could easily map out a small tumor in the right iliac region, near the McBurney point, which was very tender upon deep pressure. I confirmed the diagnosis, and agreed with Dr. Sabin

Montgomery, Drs. Clark and Sabin being present, I made an incision four inches long, directly over the cecum. Upon opening the abdomen I found the appendix very much enlarged, buried in a mass of strong adhesions between the ileum and cecum, and

containing a large fecal concretion. The adhesions were soon broken up, the ileum returned, and the appendix removed by the flap method. The stump was invaginated and covered with peritoneum. The abdomen was then closed with silk-worm gut, and the patient put to bed in good condition; pulse 80. On the evening of July 26th, the temperature was 99 2-5°; pulse 82; July 27th, 8 A. M., temperature 99 3-5°, pulse 82; 7 P. M., temperature 100 2-5°, pulse 102; she had passed flatus freely per rectum, and was given saline carthartics. During the night she had three large movements. July 28th, 8 A. M., temperature 100°, pulse 84; 7 P. M., temperature 101°, pulse 106. During the afternoon and evening she had seven large watery passages. July 29, 8 A. M., temperature 100 3-5°, pulse 104; had two watery passages and complained of pain in the abdomen, due to a collection of gas. During the afternoon she vomited twice a material resembling bile. At 7 P. M., temperature 100°, pulse 100. July 30th, 8 A. M., temperature 99 1-5°, pulse 86. She vomited a small quantity of bilious matter at 5 A. M., but passed a very comfortable night. Rochelle salts were ordered to be given, a drachm every hour until bowels moved. At 7 P. M., temperature 99 2-5°, pulse 90.

July 31, 8 A. M., temperature 98 1-5°, pulse 90. Vomited a large quantity of brown material; ordered an enema containing Rochelle salts, to be repeated every four hours until bowels moved. During the entire day she was troubled greatly with flatulency and nausea, and at 2.30

P. M. vomited about a pint of brown material. A third attack of vomiting occurred at 3.30, and a fourth at 5.20. No results followed the two enemas given during the day. At my visit, 7 P. M., I detected in the material vomited at 5.20 a decided fecal odor, and then realized that I had an obstruction of the bowel to deal with, and that prompt action was necessary. Seven P. M., temperature 99 3-5°, pulse 104. Realizing the gravity of the case I asked for consultation, and Dr. Rosenwasser, of Cleveland, was summoned.

At 2 A. M., August 1st, Dr. Rosenwasser confirmed my diagnosis. She had not vomited since the early evening, but there was considerable tympanities, nausea and restlessness; pulse 120, temperature 100°.

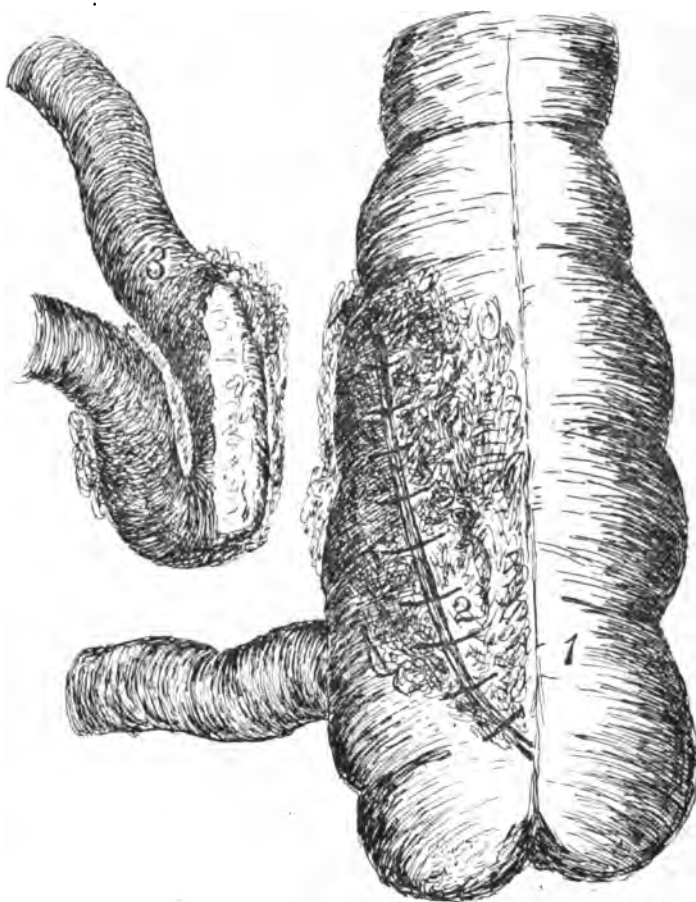
We decided to reopen at once; at 4 A. M. the patient was again etherized, and, assisted by Drs. Rosenwasser, Zimmerman, Montgomery and my student, Mr. Lichty, I reopened the incision. The large intestines were very much distended with gas, the small intestines collapsed and considerable serous fluid escaped from the abdominal cavity. Upon lifting the cecum I found everything at the seat of former operation in good condition. After a somewhat tedious search I discovered, about three feet from the ileo-cecal valve, a complete obstruction of the ileum by bands of old, dense adhesions (as represented in drawing No. 2). After thoroughly breaking up the adhesions, thereby liberating the obstruction, that portion of the ileum was brought out into the incision, and the opening into the

abdominal cavity packed with iodoform gauze. I did not feel that my patient would permit of ideal surgery, and was content to do no more than was absolutely necessary to save life.

The patient was put to bed at 5 A.

to 160. Vomiting of fecal matter continued at frequent intervals. Tympanites increased. She complained of pain in the left iliac region and was very restless. At 7 P. M., with the above symptoms present and

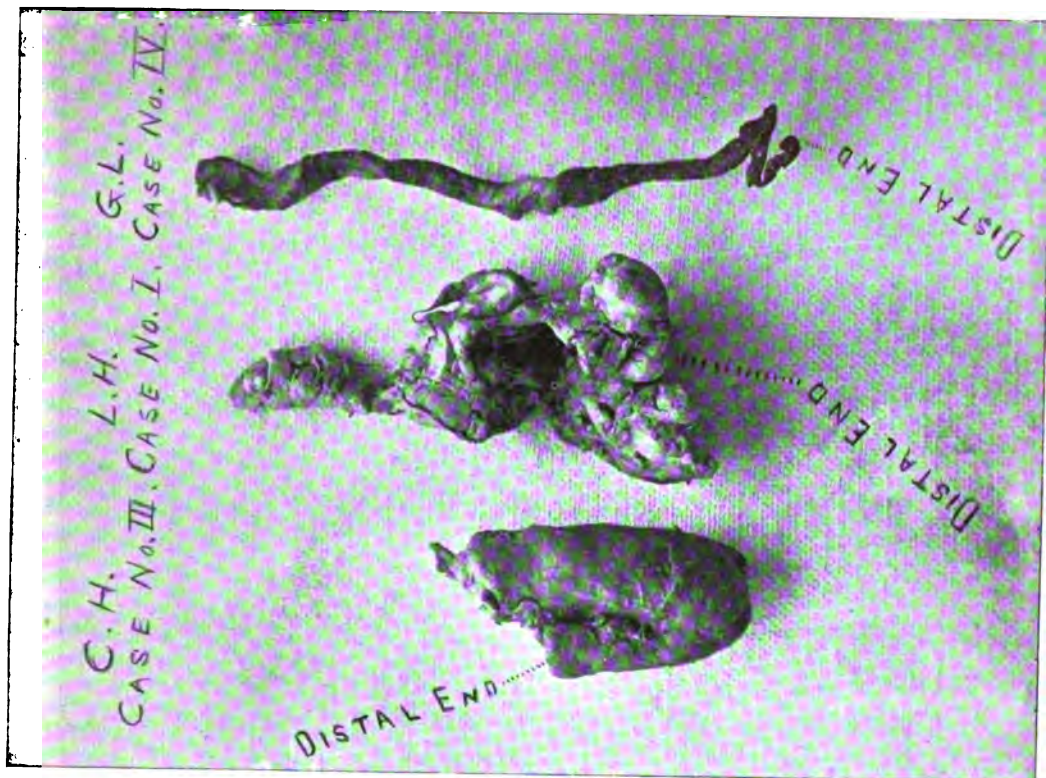
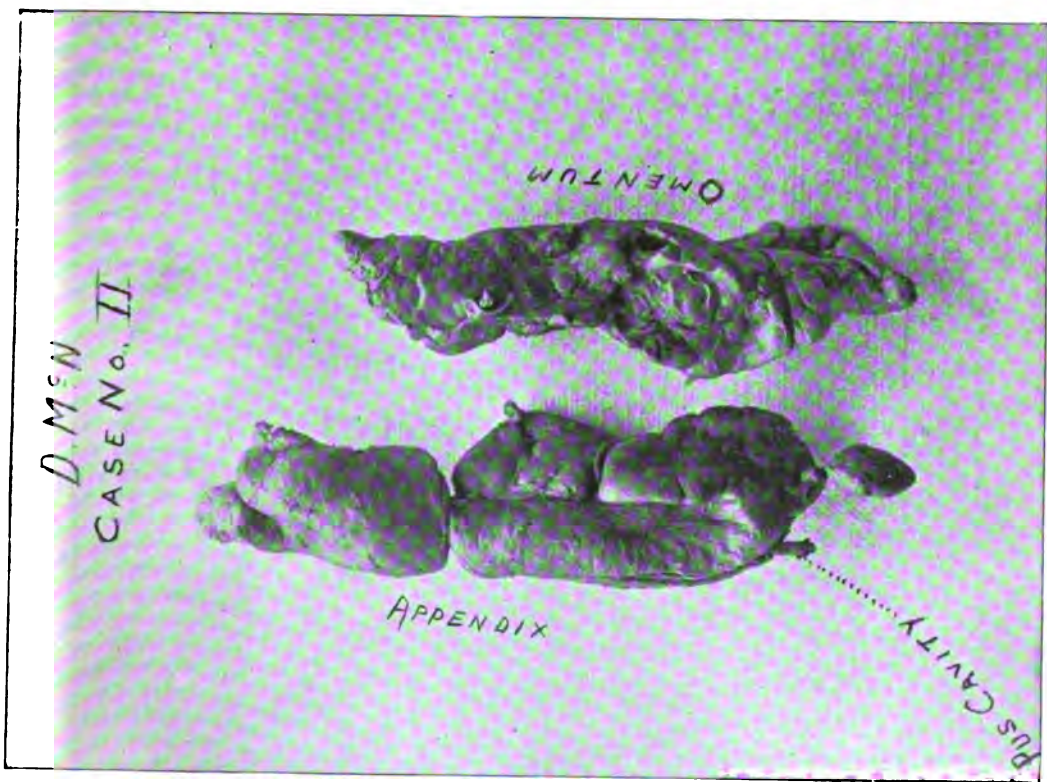
II. APPENDIX REMOVED.—(FIRST OPERATION)



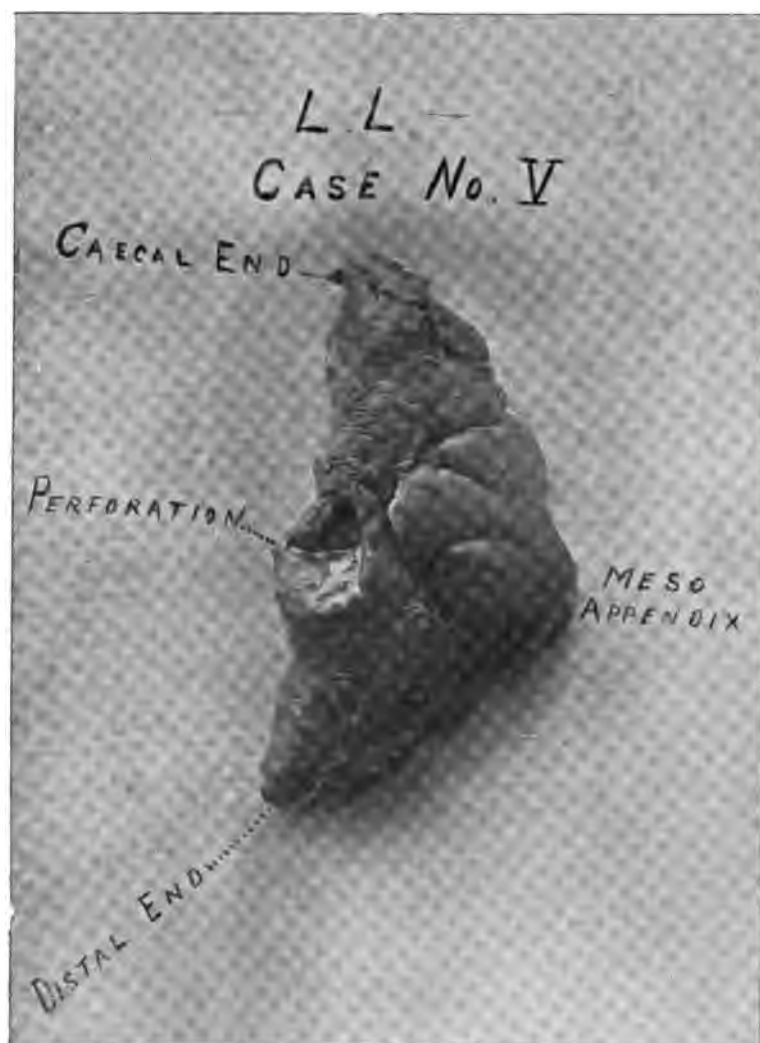
1. Cæcum.
2. Stitches through peritoneum of intestine.
3. Ileum, released from cæcum and appendix.

M., with a pulse of 134. External heat was applied, and hypodermics of strychnia, gr. 1-20, and digitalin, gr. 1-100, were ordered every two hours. During the entire day of August 1st her pulse ranged from 140

becoming worse every hour, I felt as though my case was growing more desperate, and that other obstructions had possibly been overlooked. As a temporary expedient I made a small opening in the ileum. Fecal matter



APPENDICITIS.
 Specimens from Cases of Dr. Peck.
 (See next page, 85.)



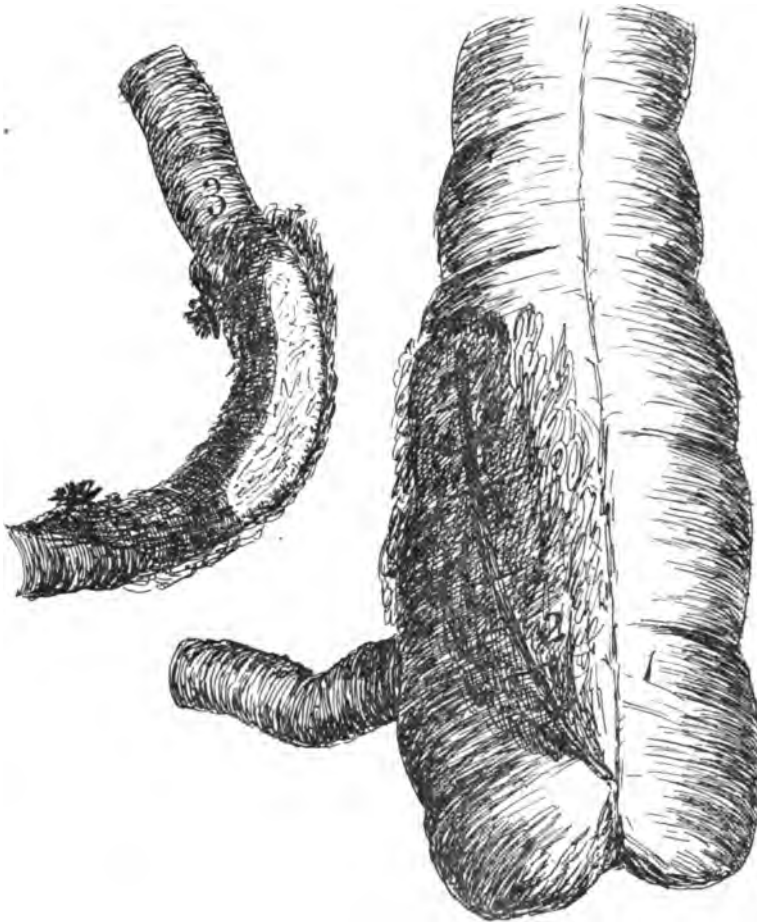
APPENDICITIS.
Case of Dr. Peck.
(See page 85.)

and flatus came away in large amount, the vomiting ceased, and tympanites almost entirely disappeared.

Thursday, August 2, 8 A. M., temperature 99 3-5°, pulse 126; had a fairly good night's rest; 7 P. M.,

M., temperature 98°, pulse 114; 7 P. M., temperature 99°, pulse 118; August 5th, 8 A. M., temperature 99°, pulse 110; 7 P. M., temperature 99°, pulse 108. August 6th, 8 A. M., temperature 98 1-2°, pulse 104; 7 P. M.

III. ADHESIONS BROKEN TO REMOVE OBSTRUCTION IN ILEUM.—(SECOND OPERATION).



1. Cæcum.
2. Stitches through peritoneum.
3. Ileum, freed from adhesion.

temperature 99 3-5°, pulse 132; vomiting entirely ceased and every symptom improved. Friday, August 3d, 8 A. M., temperature 99 4-5°, pulse 120; 7 P. M., temperature 98 1-2°, pulse 120. August 4th, 8 A.

temperature 98 1-2°, pulse 118. From August 6th to 14th, the temperature remained normal; pulse ranged from 104 to 118. Since August 1st she has passed a large amount of fecal matter through the artificial anus, at

first liquid, but later more solid. Her food has been liquid and semi-solid. From August 1st to 11th she has passed flatus per rectum but twice, and then but a very small quantity. August 11th, after given an enema containing Rochelle salts she passed well-formed fecal matter from the rectum for the first time since the second operation—eleven days before. During the day she had six good natural passages and passed flatus freely. August 12th, bowels moved twice, naturally, and the amount discharged through the fecal fistula was greatly diminished. August 13th, the nineteenth day, the temperature commenced to rise, and there had been considerable fluctuation up to the present time, as you will observe by the charts on page 88, 89. The integument around the fecal fistula for a distance of some two inches was so painful from excoriation that, against my better judgment, I attempted to close the fistula, August 22d, the twenty-eighth day. For three days she was very comfortable, when, upon the thirty-first day, a small amount of fecal matter came through the fistula. On the thirty-fifth day I made a second unsuccessful attempt to close the fistula. From the thirteenth day to the present time she has had from one to three daily passages per rectum, and the amount coming through the fistula diminished rapidly. She sat up for the first time on the thirty-third day; walked about the room on the thirty-eighth day; and has been out doors every pleasant day since September 3d. The temperature reached normal on the fifty-first day,

and continued so up to the present. From the forty-sixth to the fifty-first day the fistula has been dressed once every thirty-six hours. From the fifty-first to the fifty-fifth day fistula was dressed every forty-eights hours. The diet during the entire fifty-five days has been liquid and semi-solid. She is gaining strength every day and left the hospital September 18th, fifty-five days after the first operation.

CASE NO. II.

Operation during the fourth day. First attack. Recovery.

Mr. D. McN., aged 32, married, and a resident of Youngstown, Ohio; occupation, peddler.

Previous History.—With the exception of diseases incidental to childhood, he has enjoyed perfect health.

At 3 A. M. Monday, July 23rd, 1894, while preparing for work, he was seized with severe pain in the region of the stomach, extending over entire abdomen. After taking some breakfast and a dose of Jamaica ginger he went to work. The pains soon became griping in nature, and the stomach irritable, but he was unable to vomit. He continued his work about an hour, when the pains became so severe that he was obliged to quit, and was removed to his home. During the morning he had three scant, watery stools. After trying the usual home remedies without success, Dr. J. J. Thomas was called, about 7 P. M. July 23rd. Upon examination he detected all the symptoms of appendicitis. Temperature 100°, pulse 96. He advised Rochelle salts in drachm doses every hour until bowels moved.

During the next two days, July 24th and 25th, the patient had 15 watery discharges. July 26th, 8 A. M., there being no improvement in symptoms, I was asked to see him in consultation with Dr. Thomas. Upon examination I found a mass in the right iliac region, which was exquisitely sensitive upon the slightest pressure.

I confirmed the doctor's diagnosis, and advised an immediate operation. During the afternoon he was seen by Dr. A. M. Clark, who (independently of Dr. Thomas and myself) confirmed the diagnosis. He was at once removed to the city hospital, and at 5.30 P. M., July 26th, assisted by Drs. Thomas, Zimmerman and Booth, and in the presence of a number of local physicians, I made the usual oblique incision into the peritoneal cavity, and removed a very large appendix containing pus, and a large fecal concretion, together with a portion of thickened adherent omentum. The opening into the peritoneal cavity was packed with sterilized gauze. Upon further examination I ruptured an abscess sac (extra peritoneal), containing about two ounces of pus. The cavity was well irrigated with a bichloride solution, a large drainage tube placed in position, the lower part of the incision and the peritoneum closed with silk-worm gut, and the abscess cavity packed with iodoform gauze. The patient made an uninterrupted recovery, and left the hospital Thursday, August 23rd, four weeks after operation. The highest temperature reached was 101°, during the second day, pulse 100. Since the second day

creased until the seventh day, when they reached normal and so continued.

CASE NO. III.

Operation on third day of third attack. Recovery.

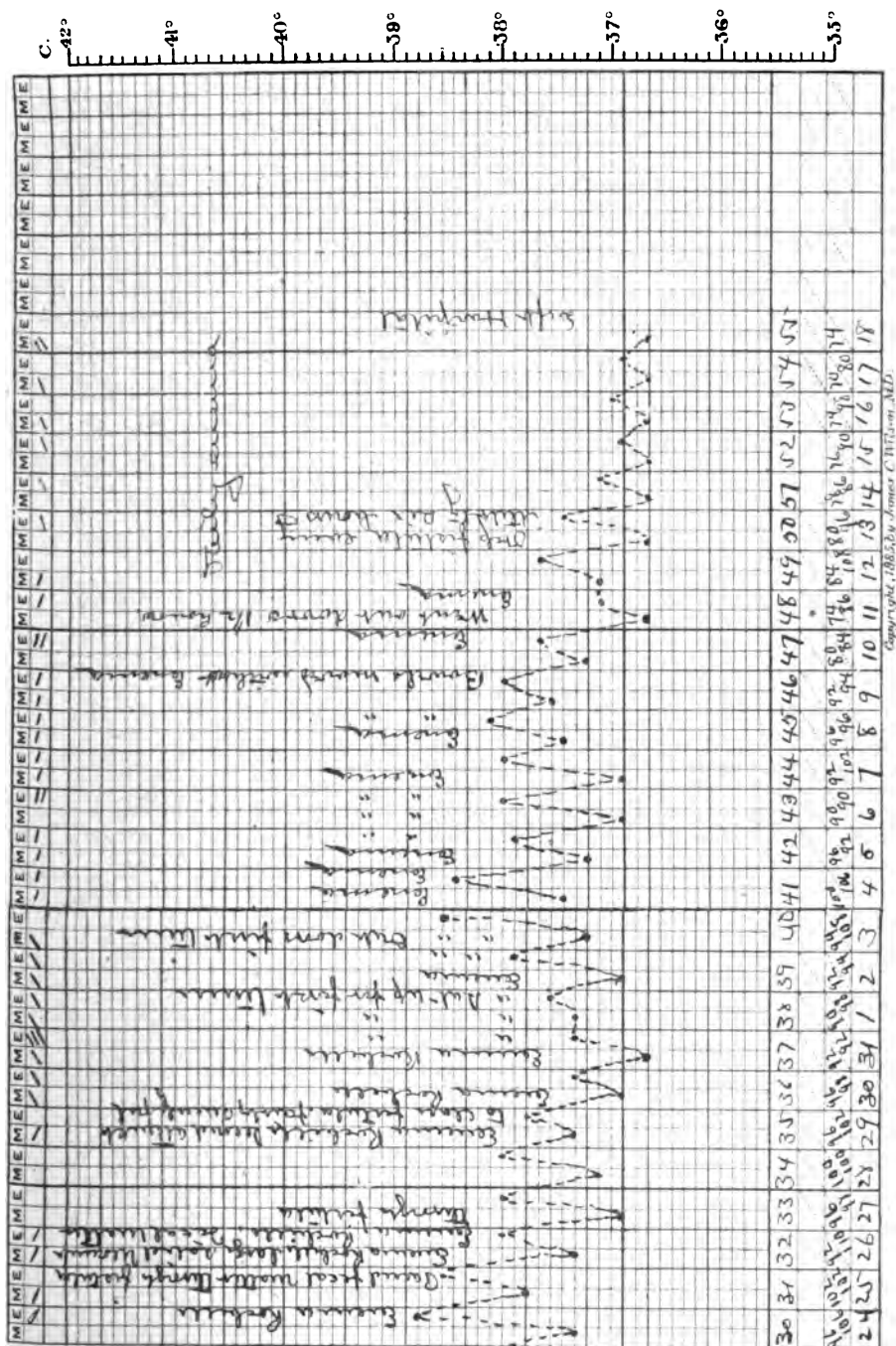
July 27th, 1894, I was asked to see, in consultation, G. H., a painter by trade, aged 27, married; residence, Youngstown, Ohio.

Previous History.—Has had diseases incidental to childhood. Usually constipated, and was obliged to take laxatives frequently. Was troubled with indigestion at times and occasionally had attacks of diarrhoea.

Some eight years ago he was taken sick with what he now thinks was appendicitis, presenting the following symptoms: Pain in region of stomach, after two days, becoming localized in the right iliac region; pain was excessive. While in bed the limbs were flexed; vomited frequently, and was constipated. The attack lasted one week, no physician having been called.

Two years ago he had a similar attack, with pain and vomiting as before, lasting three or four days. This time a physician was called; he was given saline cathartics, and after bowels moved freely he steadily improved. He thinks he was not so strong since the last attack, being more constipated and having had frequent slight pains in the abdomen and back.

Tuesday, July 24th, 1894, after eating a hearty supper he complained of pain in the abdomen, much like the pain of two years previous. From 8 to 12 P. M. he drank half pint of



whiskey and vomited frequently. At 2 A. M., July 25th, the pain becoming more severe, Dr. A. M. Clark was summoned. The doctor recognized the possibility of an appendicitis, and at once prescribed Rochelle salts, drachm doses every hour until the bowels moved. Morning temperature 100°, pulse 91. During the day he had three large watery movements. Pain was relieved temporarily, but at 9 P. M. it returned and became localized in the right iliac region, not being severe except upon pressure. Evening temperature 102°, pulse 100; vomiting ceased. Thursday, July 26th, 8 A. M., temperature 101°, pulse 100; 7 P. M., temperature 102°, pulse 104. Had a very comfortable day, pain not being present except when moving about.

Friday, July 27th, 10 A. M., temperature 102.3-5°, pulse 100. Upon examination I could detect a small mass in the right iliac region at the McBurney point, which was very tender to touch. The diagnosis of appendicitis was confirmed, operation advised, and he was at once sent to the city hospital. At 4.30 P. M., Friday, July 27th, assisted by Drs. Zimmerman and Booth and in the presence of the staff, I made the usual oblique incision four inches long directly over the mass, and opened the peritoneal cavity. After packing the cavity with gauze I removed a very large appendix, which contained about half a drachm of pus. At its attachment to the cecum the appendix was very large and ulcerated, so much so that my ligature cut through, making it impossible to invaginate the stump.

After cutting away the appendix, I touched the stump and a spot on the cecum with pure carbolic acid. After irrigation, I inserted a small drainage tube in the lower angle of the incision, extending down to the cecum, and closed the opening with silk-worm gut. The patient made a good recovery, and left the hospital August 23rd, 27 days after operation. Highest temperature since operation was 102.2-5°, pulse 90, the afternoon of second day. Temperature reached normal on seventh day, and so continued.

CASE NO. IV.

Operation during tenth day. Death from septic peritonitis sixty-five hours after operation.

G. L., female, aged 13; residence, Brier Hill.

Left home to visit at Niles, O., July 9th, 1894, apparently well, although for some little time before, she had complained of some pain across the lower part of the bowels, which her parents called "growing pains." During her visit she complained of being unusually tired. During the night of Thursday, July 19th, the pains became very severe and vomiting set in. Friday, July 20th, the pains having subsided, she walked about a mile to visit a friend, and while there she was obliged to lie on a couch the greater part of the day. The pain, which had been general, now became localized in the right iliac region. She had some fever, the tongue was heavily coated and she vomited frequently.

Saturday, July 21st, she felt some-

what better, had no fever, but her stomach was still irritable. She was up and about all day, and seemed well in the evening; in fact well enough to walk three or four blocks.

Sunday, July 22, she was much better all day and went to church in the evening; after church she ate hickory nuts and blackberry pie. A restless night followed, but the next day (Monday, July 23rd) she was better, the pains having almost entirely subsided.

Tuesday morning, July 24th, she felt quite well, but in the afternoon the pain in the right iliac region reappeared.

Wednesday, July 25th, she returned to her home at Youngstown, having carried her valise about a mile to the depot before taking the train. She appeared well, and during the evening attended a party, where she ate cake and watermelon.

Thursday, July 26th, she washed the breakfast dishes, and was up and about the house the greater part of the day. Her parents noticed that she looked sick and seemed tired. In the evening she was much worse, and at 11 P. M. Dr. H. E. Blott was summoned. He found her suffering intense pain in the right iliac region and with a temperature of 100, pulse 112. He at once suspected appendicitis and advised saline cathartics.

Friday morning, July 27th, temperature was 100 1-2°, pulse 112. During the night she had a severe chill, and the bowels had moved freely; pain was greatly relieved, but there was much tenderness in the right iliac region.

I was asked to see her in consultation with Dr. Blott at 10 P. M., July 27th. I found her with a temperature of 102 1-2°, pulse 120; face flushed and somewhat restless. Upon examination I detected a fluctuating tumor in the right ileac region, but a little above the McBurney point, which was extremely painful when touched. Examination per rectum was negative. I confirmed Dr. Blott's diagnosis, and advised immediate operation. The parents were anxious to wait until the next morning, but I insisted upon doing it at once, telling them that the case was desperate, and that only immediate action would give her any chance of recovery. She was at once sent to the hospital, and at midnight, assisted by Drs. Zimmerman and Booth, and in the presence of the staff, I made an incision over the tumor, running obliquely downwards and forwards, and removed nearly a quart of pus. Unfortunately I opened the peritoneal cavity, which I hurriedly packed, in order to prevent the escape of pus into the cavity. Upon examining the pus cavity I found a long gangrenous appendix, which was detached and removed by irrigation. Upon further examination a large gangrenous mass was found upon the posterior surface of the cecum. After again washing the cavity, a drainage tube was inserted, and the cavity packed with iodoform gauze. The patient was put in bed very much shocked, with a pulse of 160. External heat was applied, and hypodermics of strychnia grain 1-20 and digitalin grain 1-100 were ordered to be given every two hours.

My prognosis given to the parents immediately after the operation was unfavorable. July 28th, 8 A. M., temperature 102°, pulse 120; 7 P. M., temperature 101 4-5°, pulse 120. During the day the pulse was imperceptible at times. About 18 hours after operation she seemed to rally from the shock and the hypodermics were discontinued.

July 29th, 8 A. M., temperature 101 4-5°, pulse 120; 7 P. M., temperature 102 1-3°, pulse 150; she had a very comfortable night, but at 7 A. M. became delirious, and remained so until her death from septic peritonitis, at 5 P. M., July 30th, sixty-five hours after the operation.

At the autopsy by Mr. Lichty, four hours after death, we found extensive recent adhesions throughout the peritoneal cavity, and old, firm adhesions in the right ileac region. Around the incision quite an amount of inflammatory material was thrown out, beautifully illustrating nature's attempt to protect the peritoneal cavity. The omentum was bound down by recent adhesions, especially in the right iliac region. On the posterior surface of the cecum there was a large gangrenous patch. The pelvic cavity contained from four to six drachms of free pus. I must confess that the opening into the abdominal cavity was particularly unfortunate to the patient and, although I made every effort to prevent pus entering the cavity, I was not successful. But if my patient had not died from septic peritonitis I think the gangrenous patch in the cecum would undoubtedly have produced death.

CASE NO. V.

Perforating Appendicitis. — Operation during the third day. Death from septic peritonitis in twenty-seven hours.

L. L., aged 33, a large muscular man, weighing 220 pounds; occupation druggist and postmaster of Girard, Ohio. With the exception of a slight headache he was in his usual good health Sunday, August 26, 1894. While attending his duties, about 10 A. M. Monday, August 27th, he complained of pain in the abdomen, which he attributed to some fruit eaten during the morning. The pain becoming more severe and the stomach irritable, he, druggist-like, took a large dose of some cholera mixture. Not obtaining the necessary relief, he resorted to a large dose of chlorodyne. At 4 P. M. the pain was very severe and located in the right ileac region. Dr. Brooks, of Girard, was called. Dovers powders, 10 grains every four hours, and hot applications, were ordered.

Tuesday, August 28th, passed a very restless night, vomited several times, pains increasing in severity. The physician was again called at 3 A. M., temperature 102 4-5°, pulse 96. He ordered phenacetine, 6 grains, quinia sulph., 2 grains, every four hours. Had a fairly comfortable day until 5 P. M., when suddenly the pain in the right iliac region became intensified. A hypodermic morph. sulph., grain 1-4, was given, hot applications continued and an enema of hot water given without effect.

Wednesday, August 29th, slight delirium during the night, tongue red and dry. While quiet in one position

pain not so severe. A second enema was given and a small amount of fecal matter came away. Patient was more restless, and delirium more marked. I saw him in consultation with Dr. Brooks at 8 P. M. Wednesday, August 29, temperature 99 1-5°, pulse 116, expression anxious, tongue dry respiration somewhat accelerated and some slight delirium. Upon examination I found a moderately flat abdomen on left side, some fullness and exquisite tenderness on the right, especially marked at the McBurney point. I diagnosed appendicitis and advised an immediate operation. I told the friends I feared perforation, and if such was the case my prognosis would not be favorable. He was at once moved to the city hospital. At midnight (Wednesday, August 29), assisted by Drs. Zimmerman and Welsh, I made the usual oblique incision, and removed the appendix, which was found situated at the outer side of the meso-cecum and meso colon. It was intra-peritoneal, and had a mesentery of its own about three inches long. It was very much inflamed, enlarged, and perforated about midway between the cecal and distal end, containing a fair-sized fecal concretion near its proximal end, and at its distal end, pus. A cavity containing about four ounces of pus was opened. The cecum was dark in spots presenting the appearance of early gangrene. The vitality being so poor I was unable to invaginate the stump.

After a thorough irrigation of the general peritoneal and pus cavity, I passed a rubber drainage tube down

to the stump of the appendix, and packed the incision with iodoform gauze. Pulse after operation 116.

Thursday, August 30th, 8 A. M., temperature 99 2-5°, pulse 116. Vomited about an ounce of dark-colored material. Tongue, dark-brown and dry. Delirium increasing, and abdomen tympanitic. Vomited dark-colored material at 3.30 P. M. At 4 P. M., an enema with rectal tube was given; no results. At 5 P. M. vomited bilious material. At 6.15 vomited dark-colored material. At 6 P. M. ordered a glycerine enema. Small movement, and passed some flatus. Eight P. M., temperature 100 2-5°, pulse 128, very restless and delirium continuous. I advised re-opening, and asked for consultation, and Dr. C. B. King, of Pittsburgh, was called.

At 2 A. M., August 31st, Dr. King saw him in consultation, and at 2.30 A. M. the patient was again etherized and the incision reopened. Not being able to reach the obstruction, we were obliged to make a median incision. A band of recent adhesions was found, producing a complete obstruction of ileum. This was soon liberated and flatus passed freely into the collapsed small intestines. The abdominal cavity was thoroughly irrigated with distilled water. While placing a drainage tube, with my two fingers, in the hollow of the sacrum as a guide, a pus sac was discovered deep in the pelvis in the recto-vesical pouch, containing fully a pint of pus, which had a distinctly garlic odor. The cavity was again irrigated, a drainage tube placed in position and the incision

closed with silk-worm gut. The first incision was packed with iodoform gauze. The shock was too much for the patient, and he died at 3.30 A. M., August 31st, twenty-seven hours after the first operation.

Autopsy immediately after death revealed an extensive peritonitis, the omentum being adherent to the cecum. The obstructive band in the ileum was found to be twenty inches above the ileo-cecal valve. The ileum was dark and gangrenous six inches immediately below the seat of obstruction, and

gangrenous in spots from thence on to the ileo-cecal valve. The cecum was dark, inflamed, and with thickened coatings. The sutures at the stump and in the peritoneum were found in good condition. No extra peritoneal pus cavity could be found, and there was no evidence of any remaining pus, either extra or intra-peritoneal in the right ileac region. After a very thorough search, we were unable to find the pus sac, ruptured while placing the drainage tube in position.

Supplementary Paper on Abdominal Section in Intra-pelvic Hæmorrhage.¹

BY MARCUS ROSENWASSER,

CLEVELAND, O.

The implied disapproval and the fear lest it be a step backward, expressed by a number of the Fellows who kindly discussed my paper at our last meeting at Detroit, are my apology for again bringing this subject before you. I ventured an argument against the dogma "When you find an extra-uterine, early or late, remove it." I attempted to prove that *vigilant delay* under definite limitations was more safe than immediate operation and was based on authority "more positive than the vaporings of fancy." Experience with a limited number of additional cases has served to strengthen my conviction that the

position advocated is one in advance, and not backward.

My plea for *vigilant delay at absolute rest in circumscribed hæmorrhage* is based on the fact that there is no immediate danger, and that active surgical interference is proper only for definite indications, or when vigilance and rest are not practicable. At the time of my writing I was not aware of the demand for these indications made by Prof. R. H. Fitz in his annual oration before the Medical and Chirurgical Faculty of Maryland.* Permit me to quote: "It seems, therefore, not unprofitable to consider the subject of intra-peritoneal hæmorrhage from a general point of view,

¹Read before the Amer. Assoc. of Obstetricians and Gynecologists at Toronto, Ont., Sept. 21, 1894. The former paper was published in the *Annals of Gynecology and Pædiatry*. Vol. VI., p. 152, Aug., 1893.

*"Intra-peritoneal Hæmorrhage." *Maryland Med. Journal*, June 17, 1893.

especially bearing in mind the experience of the past, with the hope that the indications for its medical treatment may be made conspicuous and the existence of limitation for its surgical treatment be emphasized."

In the past fifteen months I have met with nine cases of intra-pelvic hæmorrhage. There is no stronger proof of the inefficient teaching of the past and of the necessity of further missionary work on our part than the fact that the diagnosis was not made in a single instance — barely suspected in two. Two* of the nine were due to free hæmorrhage and were operated without unnecessary delay. The accompanying table is limited to the seven cases of circumscribed hæmorrhage, and is arranged to correspond with that published last year.

I did not see case one during the attack, which had taken place eighteen years before, but I found the encysted skeletal remnants while operating for ovarian cystoma. In case two the mass was absorbed in two months and the patient has continued well since. After resting in bed three months, case three was allowed to leave the hospital, a mass of the size of an orange still remaining. She has attended to her household duties all summer, but recently there is more tumor and some pain. The necessity for operation may yet arise. I do not consider her well. Cases four and five were in hospital ten weeks and three weeks, respectively, before operation; the latter was not in my care. In cases six and seven there was no

delay, because the indication for interference was imperative when first seen. The last four cases, therefore, were operated for cause with or without delay. The causes were: Growth of tumor, two, recurrent hæmorrhage, two. There were two deaths after operation. Case five, in which the writer assisted, died of shock. Case seven was having active, recurrent bleeding for three days with failing pulse, when first seen; she was operated at once, but died septic.

I have here described unvarnished facts that we, as specialists, cannot ignore. Our ideal is early recognition and early operation—before the loss of blood has proved fatal, before dangerous adhesions have formed, before sepsis has set in, and while the operation is comparatively simple and safe. But when the case has continued for some time unrecognized, when a tumor has formed, and adhesions have become organized, the possibility of absorption is so great that it ought not be discarded. The operation, on the other hand, has become proportionately more difficult and dangerous, and ought not be done except for cause. We are confronted by two factors, the average practitioner and the average operator. To the former the symptoms of intra-pelvic hæmorrhage must be made so plain that its early diagnosis will be as assured as that of any other common disease. To the latter the indications for surgical interference must be so clear cut that he can distinguish between cases that require immediate operation and those that can bear *vigilant* delay, with reasonable hope

*Cleveland Med. Gazette, Feb. and Sept., 1894.

of ultimate recovery without operation.

In three of the cases reported it was impossible to remove the sac entire on account of numerous dense intestinal adhesions. These constitute the chief element of danger. The attempt to enucleate the sac is often followed by serious lesions, or even death. I have elsewhere* advocated non-interference with such adhesions. It is better to incise the sac, evacuate the contents, stitch edge of incised sac to parietal wall and drain. The question whether it would not be more safe to operate by vaginal incision when the tumor bulges into the vagina, and thus avoid interfering with the adhesions above is still an open one. In a careful study of the literature and statistics,† I found the advantage in favor of abdominal section to be but a fraction of one per cent.

These additional cases serve to corroborate :

*"A contribution to the Technique of Intra-ligamentary Operations." *Annals of Gynecology*, March, 1891.

†"Comparative merits of Abdominal Section and Vaginal Incision in Extra-peritoneal Hematocoele." *Annals of Gynecology*, September, 1890.

1. The ease of recognizing intra-pelvic hemorrhage.

2. The feasibility of distinguishing between urgent cases requiring immediate operation, and cases that can safely bear vigilant delay until their recovery, or until some definite indication demands operative interference.

3. The danger attending the operation ; and, consequently,

4. The propriety of crying "halt" to the furore for indiscriminate cutting for every blood clot to be felt in the pelvis.

If I were to amend the conclusions arrived at in my former paper, namely : To operate in all cases of unruptured tubal pregnancy ; in all cases of free hæmorrhage ; in circumscribed hemorrhage complicated by recurrence, or by suppuration, or growth of foetus, or interference of vital functions by pressure, I would add *non-absorption* as a possible final indication.

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CASES OF CIRCUMSCRIBED PELVIC HÆMORRHAGE.

NUMBER.	MEDICAL ATTENDANT.	AGE.	NO. OF CHILDREN.	LAST CHILD.	DISEASES CONTINUED FROM.	DISTURBANCE OF MENSTRUATION.	SIZE OF TUMOR.	INDICATION FOR OPERATION.	OPERATION.	DURATION OF DISEASE.	RESULT.	ELABORATE REPORTED.	REMARKS.
1	M. R.	42	Three.	11 years	Symptoms 13 years ago (1755). Stopped 4 months. Supposed at the time to be peritonitis.	Had gone 2 weeks over time. Attack sudden with intense pain. Flow stimulating abortion.		None.		3 to 4 months.	Recovery.	American Journal of Obstetrics, Vol. XXVIII, No. 6.	Operation for ovarian cyst, June 6, 1883. Skeletal remnants of fetus found encysted in the tube, with evidence of rupture 18 years previous to present operation.
2	Dr. G. E. Fell, Cleveland, Ohio.	32	None. 1 abortion at 8 wks.		Dec. 15, '93, to Feb. 17, '94.	Attack sudden, two weeks after menses were due. Rectal and vesical tenesmus.	Mature foetal head in left pelvis.	None.		2 months.	Recovery.		Mass had disappeared when patient left city. Recent correspondence had with Dr. Temple, of Toronto, proves there has been no return.
3	M. R., College clinic.	22	One.	3 years.	Jan. 4, '94, to April 7, '94.	Attack during menses, which were very scant. "Seemed to want to be unwell, but could not."	Mature foetal head in left pelvis.	None. (Possibly non-absorption.)		3 months.	Recovery imperfect. Mass still in pelvis. May require operation.		Had been treated for 4 weeks for pelvic abscess before she came to clinic. Was in hospital from Feb. 19th to April 7th.
4	M. R., City Hospital.	40	None.		Jan. 31, '94, to June 30, '94.	Missed two periods. Attack sudden with intermittent hæmorrhage.	Filling left side of pelvis within 3 inches of umbilicus.	Non-absorption and growth of tumor.	June 2.	Previous to operation, 4 months.	Recovery.	Cleveland Medical Gazette, Sept., '94.	Seen first March 21st. Temporary diminution of tumor caused long delay before operation. A 3 months fetus was found. Patient left hospital in 5 weeks.
5	Dr. C. B. Hamilton, Cleveland, O., operator. (Reported by permission.)	36	Two.	5 years.	About March 8, '94, to May 10, '94.	Menses, March 1, scant and dragged for a week. Attack sudden with development of tumor.	Filling pelvis to level of transverse spinous process.	Growth of tumor.	May 10.	2 months.	Death.		In hospital 3 weeks before operation. Died of shock 16 hours after operation. Fetus and placenta in sac.

CASES OF CIRCUMSCRIBED PELVIC HÆMORRHAGE.—Continued.

NUMBER.	MEDICAL ATTENDANT.	AGE.	NO. OF CHILDREN.	LAST CHILD.	DISEASES CONTINUED FROM.	DISTURBANCE OF MENSTRUATION.	SIZE OF TUMOR.	INDICATION FOR OPERATION.	OPERATION.	DURATION OF DISEASE.	RESULTS.	ELSEWHERE REPORTED.	REMARKS.
6	Dr. S. M. Shryock, Hillyard, Pa.	27	Two.	4 years.	About May 15, '94, to July 9, '94.	Went 2 weeks over time. Attack sudden. Followed 1 week later by continued hemorrhage and recurrent attacks of pain.	Filling pelvis and extending near umbilicus.	Recur- rent hemor- rhage.	June 7.	Previous to operation, 7 weeks.	Recovery.	Cleveland Medical Gazette, Sept., '94.	Operation day after arrival in hospital. No fetus found, only sac and liquid blood and clots. Went home fifth week.
7	Doctors C. Z. Gertsch and C. H. Humiston, Cleveland, O.	22	Four.	1 year.	May 10, '94, to July 5, '94.	Missed 2½ months, when suddenly attacked with intense pain. Repeated following month, followed by pelvic tumor.	Filling pelvis and reaching inches of umbilicus.	Recur- rent hemor- rhage.	July 3.	Previous to operation, 7 weeks.	Death.	Cleveland Medical Gazette, Sept., '94.	Operation on day of consultation with failing pulse and tendency to collapse. Death from sepsis on third day. Incomplete removal of the sac. Blighted embryo of 3 weeks found within ovum.

Hydrosalpinx.¹

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KANSAS CITY, MO.

To the illustrious members of this great society a discussion of the pathology and treatment of hydrosalpinx will doubtless seem a work of supererogation on the part of the essayist. Many prominent writers and operators, who, from sentiment or desire to make a "grand-stand" play, are writing and talking along this line, in tones of so-called conservatism, but are operating as usual in many instances. Their utterances have engendered a retrogressive tendency on the part of many lesser lights over the land, and a marked increase of mortality from subsequent operative procedures will be noticed as a result of the complications arising in close and distant organs as a sequence of procrastination and tinkering.

A desire to assist in correcting these false ideas, and to establish the truth, has prompted me to write this short paper, giving my personal observation and experience with cases of hydrosalpinx.

I am fully aware that this, above all other diseased conditions of the Fallopian tubes, has been the one that many gynecic surgeons have looked upon as the least hazardous to life, but when one views the history of a case of hydrosalpinx from its inception, it will be found, in the majority of in-

stances, to be that of some old inflammatory disease (pyosalpinx often) as a predecessor, and the case presents itself as an offspring of a virulent disease, the ravages of which have left permanent and irreparable injury to the delicate structure of the tube, and with no microscopical appearances of the affected organ or its contents to indicate whether or no the transition from a virulent to an innocent condition has been complete.

That a true dropsical condition of the tube is occasionally found no one will doubt, but such a find is, in the great majority of instances, in the nature of a surprise at the time of the operation, and not diagnosed beforehand.

Nosologically, it would be incorrect to classify hydrosalpinx as retention cysts. The surgeon sees these cases, as a rule, as a sequela of some well marked pathological condition, and the fluid found in them is not the normal fluid secreted by the glands in the tube, as is the case in ranula, pancreatic cysts, etc., but the remains, often, of a fluid changed from a purulent to a watery by the death or disappearance of the septic micro-organisms, primarily the starters of the diseased condition of the tubes.

The Fallopian tubes are ova-bearing canals. Some authors claim that a menstrual fluid is thrown off by the tubes.

1. Read before the American Association of Obstetricians and Gynecologists, at Toronto, Ont., Sept. 20th, 1894.

I do not believe that all cases of hydrosalpinx originate as a result of a suppurative disease of the tubes, and the mild cases, those presenting few severe symptoms during their long period of existence, and few adhesive bands and little injury to the ovaries, are cases that probably have their origin in a catarrhal salpingitis or a subinvolution of the tube following a septic "getting up" after a full term labor, or a miscarriage. These cases are rarely diagnosed prior to operation, hence the fallacy of any one advising catheterization as a relief or cure.

I have noticed that in examining a thin-walled tube filled with a watery fluid, the sensation to the examining finger was that of a large varicocele in the male, a squirrel-gut feel, with less resistance and pain than that noticed and produced in examining pus-filled tubes, but a positive diagnosis can not be made from these alone. The adhesions, as a rule, are less firm, and the uterus more moveable than in pyosalpinx, but it must be remembered just here that we never see an acute hydrosalpinx.

In two of my cases the beginning of the symptoms have dated back to a childbirth, followed by a poor "getting up" and subsequent sterility. In both the tubes were sealed at abdominal and uterine ostia.

In none of my cases are the women unmarried, and all are mothers of one or more children, but in not a single case where symptoms of diseased tubes had existed any length of time, had conception taken place after the development of indications of tubal dis-

ease. In most of the cases this period of sterility had extended over a period of several years.

Occasional gushes of a watery discharge from the vagina have been mentioned by some writers as a diagnostic evidence of the presence of a hydrosalpinx. Sutton says, "there is no trustworthy pathological evidence that these discharges escape into the uterus by way of the Fallopian tubes. The discharge of watery fluid from the uterus in gushes is as yet without an explanation." I can not quite agree with Mr. Sutton on this point, as I believe that it is possible, and that occasionally a hydrosalpinx does partially empty itself into the uterus. This as a method of cure is a problematical proposition, for even though a cure symptomatically, the tube will remain functionless, and a lasting symptomatic cure is hardly to be expected.

The diagnosis in these cases being doubtful, we can not prognosticate, (admitting a probable cure of a case of hydrosalpinx by drainage through the uterus) in any given case, the outcome of any procedure that is as uncertain in its results as the diagnosis is fallible. Nature's surgery is not the surgery that assists the unsurgical in his incomplete methods.

A Fallopian tube filled with a serous fluid, no doubt, in rare instances, has ruptured, the patient was none the worse for the accident, and a symptomatic cure resulted, but how many surgeons of to-day would recommend rupturing these cases into the peritoneum as a procedure of cure? The mere knowledge of the possibility

of a rupture of these cases makes an operative procedure for their removal imperative.

In some cases the fluid has seemed to be of the most innocent nature, while in one case I am sure that my patient was saved only by a thorough irrigation and drainage. The microscope and culture tubes are the only means of classifying the fluid in cases in which the microscopical appearance makes its character doubtful at time of the operation. The narrowest part of the tube, the uterine end, is especially contracted in this, as in all inflammatory diseases. This is due to the abundant muscular arrangement surrounding the uterine end of the tube during the passage through the walls of the uterus. This anatomical fact would in a measure seem to negative the probability of introducing a catheter into the tube from the uterus, and would doubtless result in the closure of same after the catheter was removed, thus preventing permanent drainage. I have endeavored on several occasions, with the tube in my hand, to introduce the smallest probe into its calibre, but have failed on each occasion. I have asked some of the advocates of tubal catheterization to make similar efforts under like circumstances, and they, too, have always failed.

I have noticed that the ovaries are not so often injured in these cases as in the more acute suppurative processes of the tube. They are usually found bound down with adhesions. This would seem to imply that when hydrosalpinx is a late stage of a pyosalpinx the latter must have

been a mild form of the disease. Such I believe to be true. The abdominal ostium has in every case been closed, and in only one specimen did I find the fimbriæ attached to the ovary. I firmly believe that a tube when once closed is from that time on useless as an ova-bearing canal, let the source of the closure be what it may. I have in one specimen noticed two or more strictures in the tube, all being due to cicatricial bands on outside of the tube acting as a compressing agent, as is so often the case in intestinal strictures from like causes, differing from the strictures usually found in pus-laden tubes, where the narrowing is due to inflammatory new products within the tubal walls. I have seen a specimen that measured twelve inches in length, and with walls so thick and vascular that at first suggested the idea that a coil of bowel was being ligated and removed. This rare specimen of a hydrosalpinx was in a young married woman from whom a large parovarian cyst was removed, the tube encircling the growth two thirds of its circumference. This specimen, unfortunately, was lost.

Hydrosalpinx has been a complication of uterine fibroids in two or three of my abdominal hysterectomies. Pus-filled tubes have also been noticed a number of times as complications of these neoplasms. Many writers assert that the disease is unilateral, but in all of my cases both tubes have been affected. In one case I found a pyosalpinx on one side, and a hydrosalpinx on the other.

Simple catarrh of the tubes run-

ning a short mild course, may not seal the tubal ostia, and in such cases a cure is the rule, but where the inflammatory process is so severe and persistent as to close these openings, a permanent damage is wrought, and nature is not, as a rule, a competent surgical guardian to look after and remove the pathology.

Several cases have been reported where death took place as a result of a twisted pedicle and strangulation of a tube filled with a watery fluid. If the theory that the mucus membranes of the tubes bleed monthly is true, this makes the removal of a distended tube imperative, for with closed ends, thinned walls and filled with fluid of a doubtful character, with the likelihood of a rupture from a rapid menstrual distention, there are dangers of a serious nature, and to be averted only by the removal of the tube. A fatal hæmorrhage may occur as a sequence to a rupture of a hydrosalpinx, a condition often stimulating a ruptured tubal pregnancy, both in its constitutional manifestations and local physical signs on examination. I have in the last year had two such cases in my practice. In one of the cases I diagnosed, before operating, extra-uterine pregnancy with rupture. She was in collapse from intra-peritoneal hæmorrhage at my first visit. She was 29 years old, youngest child six years old, menstrual history one of irregularity for last three months,

sudden severe pain in region of left tube, followed by symptoms of internal bleeding. Operation revealed a belly full of blood and a ruptured tube near its distal end. The tube was very thin, and its inner walls perfectly smooth, with no evidence of placental attachments at a single point; calibre large enough to admit two fingers. Abdominal ostium completely closed. The pathology in this case demonstrated two truths: First, that all hæmorrhages into the peritoneum, of an alarming character, taking place from a ruptured Fallopian tube, are not of necessity of extra-uterine pregnancy origin; and, second, that a distended Fallopian tube filled with any fluid may rupture from any rapid distention, and cause death either from a septic peritonitis or from loss of blood.

In one case the uterine extremity of the tube was largely dilated and filled with a clear fluid, while in the ampulla there existed a collection of pus separated from the clear fluid by a complete and closed structure. This state of affairs may exist in any case, and a knowledge of this fact should admonish all to lay aside the vaginal vault trocar and tubal catheters and do surgery. Any procedure that approaches the surgical, if not done in a surgical manner, will bring disappointment and disaster to both the patient and the doctor. Incomplete work is always unsatisfactory to all parties concerned.

A Clamp for the Obstetric Forceps.

BY HUGH H. HAMILTON, M. D., ENGLISH-SPEAKING SECRETARY OF THE PAN-AMERICAN MEDICAL CONGRESS,
Harrisburgh, Penn.

The success attending the use of the Tarnier forceps in accommodating itself to the curves of the obstetric canal is the result of two facts:

First, the fixing of the blades so they do not slip.

Second, the double line of traction.



Every one using the forceps knows that at least one-half, if not more, strength is necessary to grasp the handles firmly enough to prevent them slipping when pulling.

Now the Tarnier fulfills this condition of fixedness, but all have not

Tarnier's forceps, but many Hodge's, Wallace's, etc., etc. This little clamp accommodates itself to any forceps. If moved and fixed toward the handles it can be made to compress the head so as to deliver in slightly narrow pelves. It relieves the hand from prolonged *grasp*. Most hands are irregular in their tenacity and tire — of course one must use judgment and not compress a head to death. This is not for crushing.

Should one desire to apply to his forceps the Reynold's hooks, he has a Tarnier to all intents and purposes. A long forceps is the most desirable. A short forceps is sometimes *very* short.

This clamp weighs (it may be made a little light) 45 grammes, 3 ounces, measures 85x30 cm.; 3 1-2 x 1 1-4 inches.

It is upon the principle of the "gun-spring vise" furnished with the rifles in the war of 1861.

SOCIETY PROCEEDINGS.

Proceedings of the American Association of Obstetricians and Gynæcologists.

(CONTINUED FROM OCTOBER NUMBER.)

Dr. E. W. CUSHING, of Boston: I think there is one point in the paper to which exception can be taken. I understand the essayist to refer to sexual immorality as being an increasing factor of our civilization, and that difficult labors were largely results of it. A hundred years ago there was more sexual immorality than there is now. I do not think the statement should go out from this Association that where a woman has a difficult labor it is probably owing to previous sexual immorality. The woman who has difficulty in labor is the one who is too much civilized, so to speak, where the sexual development has been stunted, and she gets a narrow, long cervix which splits, an ante-flexed uterus which does not properly take care of itself. It seems to me our women are reforming themselves in their mode of living, but that the profession is not keeping up with them in regard to taking care of them.

Dr. WILLIAM P. JONES, of Rochester, N. Y., wished to object to considering a pregnant woman as being in a pathological state, and to what he understood was the author's true idea, that a woman having become pregnant should thereafter frequently seek advice and an examination. The examination of the urine was all right, but unless there was hæmorrhage, albuminuria, or something else to indicate a pathological condition, he believes a great deal of harm will be done if the woman is not let alone. If the physician upsets her, he does

worse than the old women referred to by Dr. Price, because the doctor has more influence upon his patient. He was still engaged in general practice, and if all those women who came to him to engage his services in labor were required to submit to an occasional examination, he is afraid he would have calls from their husbands.

Dr. LONGYEAR: I will say that the majority of deaths I have seen from albuminuria incidental to labor have not been attended with eclampsia. We look for eclampsia, but they do not always die from it. They oftener die from uremic poisoning without convulsions. In some cases there has not been a sign of convulsion.

Dr. DEWEES, in closing, desired it to be understood that in his paper he stated that the beauty of our women was on the increase rather than decreasing.

INFLAMMATORY DISEASE OF THE UTERUS AND APPENDAGES AND OF THE PELVIC PERITONEUM. (ABSTRACT.) I. INTRODUCTORY REMARKS. BY WILLIAM WARREN PORTER, M. D., BUFFALO, N. Y.

What I shall have to say will be of a general character, leaving the several special branches of the subject to be presented by the referees whose names appear under the respective headings.

In the writings of Bernutz and Goupil, about 1860, was the first

challenge that the old pathology, described by M. Nonat under the head of periuterine phlegmon, had received. But it was strange that the profession was so slow to accept a pathology based on such sound anatomical principles as was that of Bernutz.

But it was not until Mr. Tait, some ten or twelve years ago, began to publish his views, that the doctrine of pelvic cellulitis was first weakened, then overthrown, and finally periand parametritis were driven out of the pathological vocabulary of modern abdominal surgeons.

Let me further remind you in this connection that in 1843 Bennett asserted that inflammation of the cervical canal was the cause, for the most part, of the diseases of woman. He declared that from cervicitis came ulceration, displacements, leucorrhœa, menstrual derangements, and even ovarian disorders; and he further asserted that by the application of strong caustics to the offending os and cervix all these could be cured. Strange how quick such an absurd doctrine was accepted and how universally it was taught! For ten years this dogma ran riot until Sims arrested its mad career by addressing himself to repairing the damage caustics had done by teaching the uselessness and danger of such treatment.

In the early seventies Emmet began to announce the doctrine of pelvic cellulitis, and it was not long before almost all sexual diseases of women were diagnosticated as pelvic cellulitis as cause or effect, and treatment addressed to the relief of inflammation of the pelvic connective tissue was about the total of gynæcological work.

To-day we know that it is impossible to separate the inflammation of serous and cellular tissues in the pelvis either clinically or histologically; that pelvic cellulitis is a very rare

condition; and that pelvic inflammation is in almost every instance peritonitis caused by disease of the ovaries or tubes, or both. We know, too, that a frequently recurrent pelvic peritonitis is strongly suggestive of leaky tubes.

The newer pathology under which we are working to-day further teaches us that pus originating outside of the tubes or ovaries in the non-puerperal state is a very rare condition; that is to say, pelvic abscesses are, speaking generally, pus tubes.

By far the largest number of women in our consulting rooms to-day are those suffering from pelvic inflammation in some form, in either its primary or secondary stages, and who justly demand relief from an acute attack or expect a cure from the residues that are mercilessly ravishing their pelvis. Tumors, cystic or solid, malignant growths, tubercular disease and the like, that constitute grave and undisputed reasons for surgical relief, though observed with a surpassing frequency, are in small minority as compared with the myriads who suffer from inflammatory diseases of tubes, ovaries, and pelvic peritoneum.

Within the past seven or eight years, however, a greater uniformity of opinion on this subject has prevailed among physicians who may be classified as well informed. They are agreed that in all pus cases—and these constitute the majority—excision and drainage should be the rule; that leaky tubes causing recurrent pelvic peritonitis should be removed; that tentative measures are of little avail and are only to be employed where radical methods cannot be invoked; and especially that electricity not only does not cure but is capable of doing positive harm.

Under this increasingly satisfactory state of uniformity of opinion many women have been cured who otherwise would have been lost to the com-

munity either in death or chronic invalidism.

Hardly have we become settled down to a policy that is yielding the largest measure of favorable results when there comes a mandate from unexpected sources, like a thunderbolt out of a clear sky, crying: "Halt!" "Cease your radical, even though they be curative, measures, and adopt conservatism in the management of these conditions."

The application of the word conservative in this relation is so misleading that much harm comes from its use. Every gynæcologist and abdominal surgeon believes in true conservatism. We all believe that every organ in the body should be preserved when it can be done without a menace to health or life. We believe in resorting to the knife only after it becomes apparent that through the knife lies the surest, safest, and quickest avenue to restored health.

When, therefore, men talk about tinkering with diseased organs that are rendered useless for procreation or utterly destroyed in function and structure, menacing health and life in their progressively destructive disease, it cannot be called properly conservatism. To asseverate that such cases can be restored to health through the employment of rest, massage, electricity, a general building-up of the whole system, and by topical treatment, is to presume upon the credulity of the poor patients, but it scarcely will convince an enlightened and wary profession.

In the majority of women suffering from these inflammations or their sequelæ there is inability to meet the financial demands of a residence of six months or a year in a fashionable private hospital. This kind of conservatism is an expensive toy that the wealthy may play with, because their very wealth accords them privileges that perforce must be denied the poor.

The woman who earns her bread in the sweat of her face demands the highest exercise of that skilful conservatism which, through the most perfect surgery, may give her the quickest restoration to health by the removal of organs that are not only themselves already destroyed, but which in a progressive destructiveness are invading neighboring tissues and threatening even life itself.

Another very plausible argument that the so-called conservative gentlemen are advancing is that in doing operations on the pelvic organs women are being unsexed. It is stated that not only does sterility follow the complete extirpation of the uterine appendages, but that the woman also loses all sexual desire. Were this latter absolutely true — which is not, however, the case — it would hardly be a tenable argument. But whenever extirpation becomes necessary, it is for diseased conditions that have already caused sterility and obliterated sexual desire.

But there is another side to this question that is fraught with serious import and that is productive of great harm. I have observed, and so, I doubt not, has every one here present, the medical journals throughout the country are taking up this so-called conservative treatment, reprinting its plausible literature and commenting favorably upon it in their editorial columns. It is a fetching phrase, and the argument is so taking in its method as to win favor with the multitude. Many physicians, especially the younger ones who do not look beneath the surface or fail to comprehend the motives of these men, accept their teachings and promulgate their dangerous doctrines to their clients on every and all occasions.

The result of all this it is not difficult to comprehend. Deserving women who need surgical operations for their cure are frightened away

from the operating rooms of skilful surgeons, hence are prevented from obtaining relief, and thus go on from bad to worse until the end.

Now, must we go all over the argument again in view of these so-called conservative doctrines that are being preached on every occasion and published to the four winds? Must the ground all be fought over again in order to let these suffering women understand, as they had already meco very largely so to do, that their only safety lies in submitting themselves to the careful hands of skilful pelvic surgeons who are the true conservators of their health and lives? I hope not.

I trust that this Association will on this occasion so put the stamp of its disapproval on the clever but dangerous teaching of these clever though dangerous men as to counteract its ill effects and to stem the tide of erroneous, misguided, and hazardous doctrines that are springing up therefrom in the columns of the medical press.

II. CLINICAL HISTORY.—BY CHARLES A. L. REED, M. D., CINCINNATI, OHIO.

We have heard this morning of the erroneous doctrine of Fenwick, and the erroneous doctrine of Bennett. There is a soul of truth in the doctrine of Bennett—namely, that nearly, all cases of pelvic inflammation have their origin at the cervix. Whether we shall call these cases by the term of endocervicitis or cervicitis, or whatever you may see fit, nevertheless the symptomatology with which I am to deal—and I am warned not to trespass upon the pathological field—begins with a previous history of cervical leucorrhœa. Following this there is generally some perturbation of the menstrual function. Ordinarily the symptoms are those of unobstructed dysmenorrhea; yet in a number of cases this particular symptom is not

manifested. Later, however, the premenstrual pain occasioned by the periodical afflux of blood to the pelvis prior to the onset of the menstrual flow occasions an increase of distress which forces itself upon the consciousness of the patient. After a while this pain becomes localized to either side of the uterus. There is a heaviness, a dragginess, amounting at times to a sharp and lancinating pain; but after this has been experienced, perhaps through some months, suddenly the patient feels a chill, has a slight sweat; perhaps, and then she experiences her first medication in the form of quinine given for the relief of malaria. But this malaria is intractable. It recurs without reference to that definite periodicity characteristic of the duration of malaria organisms, and after a period, more or less prolonged, of this futile treatment, the patient has been subjected perhaps to an examination. At this time we come in contact with the objective features of the disease. Upon examination the practitioner experiences—what? There is generally more or less tenderness to either side of the uterus, and there may be tumefaction. The patient occupying the semi-prone position with the thighs well flexed, giving every possible relaxation to the abdominal wall, will not even then permit the examiner to definitely outline the position of the ovaries and tubes in many of these cases, for the reason that there is at this time a very considerable amount of general pelvic engorgement. The leucorrhœa of which she has complained, and which comprised the prominent symptom, becomes perhaps purulent and becomes offensive, and with the manifestation of this change in the uterine discharge there is a certain relief of pain to either side of the uterus. After a while there is a repetition of previous experience, of intense degree. The chill comes now with unmistakable

severity, the fever is of the most pronounced character, and then come the aggravating and exhausting sweats. This experience is again repeated within a short period. Then follows an increase of pelvic tenderness. Later on there will be lassitude, exhaustion, and all the pronounced features of anemia become manifest. The tumefaction within the pelvis is now most pronounced. There is no repetition of this gush of purulent leucorrhœa. Then comes the culminating sweat following the chill and the fever, and later prostration amounting to collapse. Then comes abdominal distention leading to a fatal infective peritonitis.

There is another type of cases. The young married woman, or the courtesan, experiences a sudden discharge of a purulent character. She finds pelvic tenderness at once occupying the entire cavity. This increases in a few days until there are manifest evidences of progressive invasion from the cervix through the mucous tract, until infection reaches not only the uterus, the endometrium, and the lining membrane of the adjacent Fallopian tubes, but the peritoneum, and active symptoms become manifested, which lead to a speedy fatal result.

We have another type of cases—those subjected to curettement following a miscarriage. The patient has been effectually vaccinated on the inside of the uterus by curettement for the relief of so-called purulent endometritis. A sharp curette has been used, and the endometrium fairly well scraped, the lymph channels have been opened, and there has been invasion of them until we have diffuse tumefaction of the pelvis, not localized or lobulated, but that general diffuse tumefaction which indicates general invasion. This is the dangerous form of pelvic inflammation, and when left to itself results in that serious form of phlegmon which may give rise to the

liberation of septic elements into the general circulation and a fatal septicemia may result.

III. CAUSATION AND PATHOLOGY. BY L. S. MCMURTHY, M.D.,

I shall use the term pelvic inflammation to embrace all those inflammatory diseases which involve the Fallopian tubes, ovaries, and pelvic peritoneum. The uterus is almost invariably involved in the process, its cavity being, as a rule, the point of departure of access of the inflammation. The inflammatory process, beginning in the uterine cavity, extends along contiguous mucous surfaces through the Fallopian tubes to the peritoneum, often destroying tissues and invading parenchymatous structures. The salpingitis, peritonitis, ovaritis, exudation, adhesions, pyosalpinx, hematosalpinx, hydrosalpinx, ovarian abscess, and lesions of the bowel are but resultant factors in the disease, corresponding to the intensity and stage of inflammation and structures involved.

Pelvic inflammation originates from septic infection, which may be specific or traumatic, including the wounds of childbearing and abortion. Puerperal infection exceeds all other etiological factors, in this disease. The open surface left by separation and extrusion of the placenta is peculiarly liable to infection, as is also the intrauterine surface after abortion. The enlarged lymphatics and hypertrophied blood vessels, torn across and gaping, the process of degeneration following the completed term of pregnancy, offer a most receptive surface for absorbing, developing, and diffusing the slightest contamination by septic matter. An amount of septic matter will suffice to infect a woman under these conditions, which would be resisted and overcome by the normal non-gravid uterus. Moreover, the retention of portions of placenta par-

tially detached and deprived of circulation renders infection even more easily accomplished. There is abundant evidence that many puerperal women are infected with gonorrhœa, and that both the puerperal and specific cause may coexist in the same individual. The conjunction of specific infection with the traumatism of labor has been termed *mixed infections*.

A different class of traumatic infections is surgical operations and manipulations upon the uterus. Such are the injury and contamination of sponge tents, of steel dilators, and operations upon the cervix and within the uterine cavity. The traumatism by which tissues rich lymphatic distribution are exposed to infection by foul discharges, and dirty instruments is often the initial step in severe grades of pelvic inflammation. It is not the traumatism *per se* which begets the inflammatory process; it is the admission of septic material.

When a woman becomes infected with gonorrhœa the vagina is at first the seat of specific inflammation. There is a continuous membrane by which the inflammatory process can spread to the peritoneal cavity, and the virus often traverses this entire membrane with amazing rapidity, producing suppurative salpingitis and peritonitis in a brief period. As a rule, the inflammation exhibits itself in recurrent attacks, and the protecting peritonitis limits and encloses the infected area through long periods of subacute and chronic disease. Modern pathological researches have combined with the disclosures of modern pelvic surgery to demonstrate the active agency of gonorrhœa in the causation of pelvic inflammation in women. My studies do not lead me to concur with the view held by some that an attack of gonorrhœa is never cured. I believe that in numerous instances both men and women make perfect recoveries from this disease—that is, get well

without extension to the membranous urethra and bladder in the one, and without invasion of the Fallopian tubes in the other. It is, however, a most serious disease in both sexes, and plays a conspicuous part in the causation of pelvic inflammation. No virus to which the female genital tract is exposed is so active and destructive as the gonorrhœal. It traverses the mucous membrane with rapidity, invades the peritoneum, destroys tissues, forms sacs of pus, and often terminates fatally.

The ovaries and Fallopian tubes are situated on the posterior surface of the broad ligaments, and the fact that adhesions and exudates are more commonly found posteriorly than anteriorly shows that the mode of invasion is by continuity of membrane rather than by vascular routes from cervix to broad ligament. Syphilitic ulcers of the cervix may be the cause of pelvic inflammation by transmitting infectious products along the mucous tract or lymphatic channels.

Tubercular salpingitis deserves mention among the causes of pelvic inflammation; and the eruptive fevers, especially scarlatina and variola, are believed by some to be accompanied by salpingitis. A sudden suppression of menstruation is one of the rare causes of pelvic inflammation.

In a certain proportion of cases pelvic inflammation appears as a complication of other morbid conditions. Such are the cases wherein inflammatory lesions are associated with neoplasms of the ovaries and uterus. Rupture of cystic growths, the irritation of solid tumors from pressure, and obstruction of the Fallopian tubes with retention and extrusion of secretions, with hypertrophy of epithelial and interstitial elements, are conditions commonly associated with localized peritonitis complicating neoplasms of ovaries and uterus. Imperfect development and malforma-

of the uterus and appendages may sustain a causal relation to pelvic inflammation.

At the outset there is congestion, followed by effusion. The effusion is from the surface of the mucus membrane and into the underlying connective tissue. The rapidity and extent of this process depend upon the virulence of the attack and the condition of the parts. The tubes become filled with serum, which may drain into the uterus or discharge through the fimbriated extremity into the peritoneum, or it may be retained by closure of both these openings. The exudation into the tissues varies, making the tube walls more or less thickened by infiltration with cells, in some instances penetrating the walls and directly involving the peritoneum. The tube becomes adherent to the uterus and ovary, the broad ligament is matted down and the fimbriæ covered over. Should Nature's efforts avail to confine the effusion by sealing the fimbriated extremity of the tube, a hydrosalpinx will be formed. In some instances the inflammatory process is characterized by hæmorrhage, forming hematosalpinx. Resolution may take place later on, either to a complete or incomplete degree. If the process terminates in suppuration a pyosalpinx will be formed. Should the contents leak through the fimbriated opening into the peritoneum, whether pus has formed or not, active peritonitis will be established. This process is conservative, Nature endeavoring by adhesions to shut off the general peritoneum and limit the inflamed area. The characteristic inflammatory products of a serous membrane are deposited; later the serum may become absorbed, and the exudate remain to undergo organization or suppurate. When this process is characterized by extreme virulence, tissues are infiltrated and destroyed by the very intensity

of the process, the involved tissues being so friable as to break down under slight manipulation. This process may involve not only the tubes but the uterus and contiguous portions of intestines, causing the uterus to slough and the walls of the intestine to give way.

The proximity of the fimbriated extremity of the tube to the ovary involves the latter organ, and it becomes attached by adhesions to the tube. The infection is thus transmitted to the ovary, and when suppuration occurs ovarian abscess is conjoined with pyosalpinx. Nature, always prolific here in her resources, throws out layer after layer of exudate in her efforts to limit the suppurative area, and in time an immense thick sac is formed, enclosing the abscess cavity, originating in tube and ovary. The breaking through this wall is signalized by an outbreak of peritonitis corresponding in gravity to the area invaded, or by a discharge from bowel or bladder, or externally through the abdominal wall, as the place of rupture may happen to occur. In the progress of the chronic inflammatory process changes take place in the walls of the tube, known as chronic interstitial salpingitis. These changes consist in infiltration of the walls of the tubes with cells, and degenerative changes. When this advances to suppuration the walls become soft and cheesy. In a certain proportion of cases of long-standing inflammation, especially when characterized by repeated abscesses, the tubes and ovaries may be destroyed, leaving only vestiges of normal structures in the form of a membranous band.

In acute inflammation the effusion may consist largely of serum with varying additions of lymph; the serum being absorbed, the inflammatory area is covered with thick deposits of lymph. This exudate forms the ad-

hesions, which may be soft or firm as the inflammation may be acute or chronic. Advancing infection may break down these deposits. Partially broken-down lymph is very commonly associated with acute suppurative salpingitis. The lymph may break down at different points, thus forming pockets of pus. The pockets formed may vary in size from the smallest to a universal pelvic abscess, bridged over above by the omentum and intestines. The limitation of suppurative force by firm organized exudate, and burrowing of pus along intermuscular cellular spaces in seeking an outlet, has caused close observers to mistake this condition for an extraperitoneal cellular abscess.

IV. DIAGNOSIS AND PROGNOSIS BY
J. F. W. ROSS, M. D., TORONTO,
CAN.

THE diagnosis of acute inflammatory disease of the uterus is not difficult to make. Usually the patient, after some mechanical injury for the production of miscarriage, or the introduction of sepsis following miscarriage or labor, or through gonorrhœal infection, is seized with a chill, rise of temperature, increased pulse, and in many cases with severe pain in the pelvic region. In some of the cases, however, the pain may be almost entirely absent, and in cases in which this inflammatory condition follows labor I have looked upon this absence of pain as a bad omen. The cases of phlebitis affecting the uterine sinuses are usually the ones that prove most rapidly fatal by the production of secondary abscesses, and pain is usually wanting.

With the invasion of the tubes and pelvic peritoneum there is an accession of pain, and if the inflammatory condition spreads the entire abdomen becomes tender. In some cases the bladder is secondarily implicated and

we have painful micturition; in others the rectum is secondarily implicated and we have painful defecation. In many cases of acute metritis following gonorrhœal infection I have observed a sudden onset of what cannot be looked upon as a menstrual flow, because it frequently appears in an intermenstrual period. In some cases this discharge may last for two or three weeks, and if the inflammatory condition becomes chronic the flow may at a later period become excessive. In fact, in many cases of inflammation of the uterine appendages, one of the important symptoms is menorrhagia.

I meet with a large number of cases of progressive salpingitis in fallen women who come under my care in the different hospitals. The temperature in such cases usually runs a somewhat erratic course, and intermittent rises will be observed if the cases are watched for a considerable period of time. These elevations may last only for twenty-four or thirty-six hours, and the temperature will then drop to about 99°. The patient complains of pain, and this pain is intermittent in its character. In some cases dysmenorrhœa is present; in other cases the diagnosis is quite easy. The floor of the pelvis feels hard and boggy, and the uterus is fixed. In other cases the uterus may be to a certain extent movable and masses will be felt on one side or the other of it or behind it. In many of these cases, in which there are large pus tubes within the peritoneal cavity, there may be no particular rise in temperature.

The diagnosis of the cases in which there is but little to be felt in the pelvis, is difficult, and are likely to be mistaken for so-called ovarities and for cases in which the ovaries are tender, owing to some anemic or other condition. Neurotic women and anemic girls frequently suffer from

this ovarian tenderness. Such tenderness exists without the presence of any actual disease, and these cases should never be operated upon. Observed closely for a time, no acceleration of pulse or rise of temperature will be noticed.

The pus tube may be mistaken for a uterine fibroid. I have made this mistake in one case myself. There was no pus in the interior of the tube, but its wall was enormously thickened and itself was a solid fleshy mass. The pus tube may be mistaken, if adherent to the anterior abdominal wall, for a growth arising from the rectus muscle. I have one such case convalescing after operation, from whom I took a large pus tube that had become adherent to the anterior abdominal wall, and from which pus had burrowed into the sheath of the rectus muscle.

During the development of pus tubes patients are usually supposed to be suffering from typhoid or malarial fever. The diagnosis in such cases should be made with an expert finger in the vagina.

Prognosis.—Many cases of disease of the uterus and appendages become entirely well without operative interference. A large number of cases progress, and require for their relief surgical measures. There is an intervening class in which the disease seems to be in a state of abeyance, but likely to be lighted up again at any minute. In the cases that suffer from relapses nothing will relieve them but the removal of the tubes and ovaries. In cases suffering from large pus tubes cure is dependent upon the removal of such tubes. The drainage of pus tubes I consider to be bad practice. What applies to the pus tube applies equally well to the septic hematoma of the ovary and ovarian abscess.

In speaking of the prognosis of such cases it is impossible to do so without considering the subject of treatment.

For pus tubes interfering with health and causing intermittent attacks of inflammation there is but one treatment—namely, removal by surgical means. The results after this operation are perfect, but the operation is attended with considerable danger. The dangers certainly are much diminished if the patients are placed in experienced hands. The patients do not grow fat and ugly, nor become insane, nor lose sexual vigor when it has been present before operation, nor grow a beard or moustache, as is occasionally remarked by laymen. They leave the invalid chamber and become useful members of society. They lead active lives and look after their homes.

When inflammation of the uterine appendages kills, it does so for want of operation, but it kills slowly, and before producing death causes an enormous amount of suffering. Many patients may live long enough to have sinuses running forward through the abdominal wall or down through the pelvic floor, discharging through large pus tubes, do not heal, and the patients go from bad to worse. A condition of chronic septicemia sets in the patients become emaciated and confined to bed, bedsores form, and they slowly die.

V. TREATMENT. BY MARCUS ROSENWASSER, M. D., CLEVELAND, O.

1. ACUTE PELVIC PERITONITIS.

(a) *Medical Treatment.*—When the immediate cause—foreign body, decomposing tissue, or germ-laden material—has been removed from vagina or uterus, the parts cleansed and disinfected, and the bowels have been well purged, rest in the horizontal position, with hot fomentation or ice bag to the hypogastrium, is the essential feature of the medical treatment.

The temperature is not often exces-

sive, hence seldom requires attention. The pulse may, however, be rapid and weak, indicating the need of stimulants and strychnia.

Opiates should be used sparingly and should be early discontinued.

The fact that the inflammation is more or less limited to uterus, ovary, or tube does not in itself imply the use of local applications. Hot vaginal douches may be used when well-borne, not otherwise. Small blisters to the inguinal region are of no value. Frequent repetition of saline laxatives is followed by relief of pain. The bromides serve a good purpose in allaying reflex nervous manifestations.

Giving iodides and mercurials with the idea of dissolving exudates is decidedly wrong. Nature throws out plastic material as a bulwark against peritoneal invasion.

(b) *Surgical Treatment.*—Curetting and free drainage of the uterine cavity, before infection has spread to the tubes or beyond, will in many cases limit or abort the inflammation within the uterus. But the utility is questionable, nay, it is often positively harmful, when the appendages have been drawn into the inflamed area. Nature is then busy sealing the tubes and repairing leaks and overflow. To disturb and pull down the uterus, and thus to sever the web and meshes of adhesions in process of formation, is to invite general peritonitis.

Abdominal section is called for when symptoms point to formation of abscess either within a pelvic organ or within a circumscribed space in the pelvic cavity. Should such abscess rupture, section is indicated if it can be performed immediately or within the first few hours before general inflammation has developed. In the latter event results are not encouraging.

Guided by my own experience (after general inflammation has devolved), I might yield to the request to

open the abdomen and drain, if the pulse were small and rapid and there were vomiting and increasing tympanites. The operation would, of course, be a forlorn hope. On the other hand, if neither tympanites nor vomiting was present, despite small, rapid pulse, I would prefer to stimulate and push strychnia to the point of toleration; because, while such symptoms indicate shock, they also indicate control of the septic process. To interfere by the additional shock of operation, and by disturbing protecting plastic formation, is not rational. I believe the chances of recovery in such event are better by medical than by surgical treatment.

2. CHRONIC PELVIC PERITONITIS.

(a) *Medical Treatment.*—During the subacute period, as also early in the chronic stage with lingering tenderness, masses of exudate, and occasional rise of temperature, rest in bed with attention to bowels, to feeding, and to hygiene, is still the essential factor; and rest, in its broadest meaning, continues the elementary principle of treatment even after the patient is about. Boroglyceride or ichthyol tampons of lamb's wool, by supporting the pelvic diaphragm and depleting the blood vessels, hasten recovery in some cases. Gentle pelvic massage may be of value in softening adhesions, and may thus aid in the reposition of fixed organs. Tonics, cod-liver oil, and general massage and electricity will aid in restoring faded blood, weakened nerves, and wasted muscles. Local electricity may be of temporary benefit. As a resolvent of exudates it has proved a dismal failure at my hands after faithful and patient trial. Repeated blisters or other counter-irritants over the hypogastrium serve the good purpose of temporizing.

There are some cases whose condition is uninfluenced by medication or

treatment. They remain chronic invalids, fluctuating between fair though feeble health and spells of pain and nervous reflexes. They are comfortable for a time, but break down on over-exertion, exposure, or violent emotion.

(b) *Surgical Treatment.* — Curetting the uterus was at one time considered unsafe when tubal inflammation has since taught that, carefully done, it may be a means of improving womb and appendages. The improvement is often preceded by increased tumefaction and tenderness of the appendages, which are slow in subsiding, sometimes many months, but which ultimately do disappear, leaving the patient symptomatically cured, the backache, dysmenorrhœa, leucorrhœa, painful locomotion, and nervousness all gone.

Even in pyosalpinx curetting has been advocated and practised with a view to establish drainage by the uterine route. A study of the pathology of suppurating appendages will stamp the procedure as one partaking more of the empirical than of the scientific.

Abdominal section is to-day the recognized treatment for removal of suppurating appendages, either singly or bilaterally, or together with the uterus, if the latter is also infected or honeycombed with pus. Section is indicated for thickened, enlarged, or cirrhotic appendages that cause prolonged dysmenorrhœa, local suffering, or aggravated reflex disturbances. Firm adhesions causing much distress by displacing pelvic organs can be relieved more safely by section than by other more crude methods. If there be good grounds to suspect that sterility is due to displacement or constriction of appendages by adhesion or bands, section will best accomplish release and cure. Finally, the sinuses and fistulæ that remain after the dis-

charge of so-called pelvic abscess, and resist efforts to cure by drainage and injection of irritants, may be cured by removing the cause, located in the remnants of suppurating tube or ovary.

VI. TREATMENT BY A. VAN DER VEER, M. D. ALBANY, N. Y.

THE ground of treatment has been very well covered by Dr. Rosenwasser. We should make an earnest effort in all of these cases to learn the cause of the inflammatory trouble. A young girl is brought to us, or a young woman, who has been an invalid for five years. She is compelled to give up school. In such a case we must carefully inquire into the condition, learn as to what may be the actual cause of the inflammatory condition that exists about the pelvis. The question will occur to you: Has she had for three or four years a persistent leucorrhœa? Has she become infected in some manner with a purulent discharge, not necessarily specific, but by some form of abscess or sinus that has existed? I have found in one case a well-marked inflammatory condition of the pelvis due to an uncured ischio-rectal abscess that one time discharged into the vagina. This condition should be looked into with the utmost care and caution. Irritations about the rectum should be carefully looked for in young girls who present a condition of this kind.

As to the condition of the appendages in a young girl in early life, we should ask ourselves the question: Has Nature accomplished her work well? Has she developed the uterine appendages in a proper manner? Has the girl, from the time the menstrual act was noticed, had a normal menstruation? In many cases we will find that menstruation has been irregular; that the patient has always suffered; that she has had perhaps

an abscess, an ischio-rectal abscess or an ovarian abscess, which has escaped through one of the lymph channels, through which Nature will often make an exit for the pus. She may have an undeveloped ovary tube on one side. These causes should be looked into carefully before carrying out an intelligent line of treatment.

As to the cases occurring in the adult, the married or unmarried woman, these must also be examined with the utmost care. If the patient has borne children the condition of the cervix should be examined with great care. That noble man — Dr. Emmet — has done great work for us in reference to the lacerated cervix. The condition we seek may rest within the cavity of the uterus while the tubes are absolutely free from disease. There may be no trouble outside of the cavity of the uterus. But you begin with your tincture of iodine, with your various applications; you begin curettement, and perhaps then you light up an inflammatory condition, and the patient is finally made worse by the line of treatment carried out. Make a careful examination, and, if the cause be a lacerated cervix, it must be repaired.

There are cases, as has been stated by some of the previous speakers, which present conditions that are extremely difficult to diagnosticate. The patient has gone along fairly well and has had two or three attacks of a mild form of pelvic peritonitis. During the next attack an exudate is thrown out. We feel when we see these acute cases that they present some difficulties. It is not an easy matter to tell whether the hard masses we meet with are benign or malignant. These cases should be carefully classified as to treatment.

I must say I do not feel like condemning the curette entirely, for I believe it is of service in some cases. When we have a high temperature

with a rapid pulse we should not go inside the uterus with a sharp curette. Do a gentle form of curetting, then pack the uterine cavity with iodoform gauze, and the patients will be benefited. In two or three days you may have a case of pyosalpinx that needs a more radical operation. You need not ignore the use of the curette entirely. It may be used in cases of endometritis. In the submucous form of polyp you can perhaps use the sharp curette. No one can cover the conditions present in these cases by one simple examination. The cases should be carefully studied and then the line of treatment selected.

When a case comes to us with an inflammatory condition of the pelvis, I do think we are justified always in saying to the patient that the uterine appendages must be removed. The condition must be outside, when operation is not necessary. On the other hand, how many of you have seen those cases that have passed from office to office and from city to city, where there has been absolutely no relationship for years and years on the part of the husband and wife, perhaps, the husband having spent his hard earnings from week to week in going to this and that doctor, they telling him they could cure his wife without operation; and finally the case goes into the hospital with all the complications, with all the sorrowful conditions present of immense pus tubes opening into the rectum — the saddest of all conditions. Then we are to operate. It is unfortunate that we do not get these cases earlier.

There are cases where the cornu of the uterus is in a thickened condition, bimanual examination will not cause the woman to complain, and the uterus is somewhat fixed. In these cases I believe we can do some good by local thorough douchings, putting the woman under a sensible, cautious line of treatment. The old suppository of

lead and belladonna, to be held there and renewed, the patient being kept absolutely quiet, will materially benefit these patients. Furthermore, we must look into the condition of the bowels; see that they are thoroughly emptied every day. We have patients that come to our office for examination and we find that the bowels have not moved in two or three days, and they expect a careful examination of the pelvis to be made. The condition of the bowels, therefore, must be studied carefully, as well as the bladder. We may be able to carry some of these cases through successfully by this line of treatment without removal of the appendages, but the vast majority of cases of pelvic inflammation will ultimately necessitate such an operation.

VII. TREATMENT.—BY JOSEPH PRICE,
M. D., PHILADELPHIA.

It is argued by the conservative camp to take away just as little as possible, leaving adhesions if necessary to simplify the work. This, to the thorough surgeon, is not permissible. His aim is to remove disease, and to bring the parts not diseased into as near their normal anatomical relation, and by so doing conduce more certainly to the ultimate well-being of the patient. Under this point of view the operation that would remove a diseased tube and leave an ovary bound down by adhesions to the pelvic wall or to the intestine or omentum is not surgery at all; it is only experimental dilly-dally, which, if it results well, is no credit to any one.

The same may be said if the method is applied to the conservation of a useless tube, because it is hard to remove. To know that in these cases women get well if we leave them when we have opened the abdomen to find them, puts our conserva-

tism in the light of doing a useless operation, and becoming at once conservative because it is the easiest thing to do. To leave a tube full of pus or blood simply because it is hard to remove, is like building a bridge till we get into deep water and then completing it with a ferry-boat.

To say that many ovaries have been removed which ought to have been saved is to say what we all know, namely, that cures by operation have been sought when the idea was not justifiable, and we know that such errors were a part of the pioneer work, accidentally of the best men, designedly of the seekers after notoriety. But this does not answer the surgery of to-day, neither is it a fair accusation nor a plea. It is simply special pleading in the line of popularity. It is a fad which, like electricity, tickles the popular ear, the uncritical eye, and the easily satisfied imagination.

The surgery that leaves pus tubes and abscesses to get well of themselves, and afterwards find pregnancy occurring, is so fabulous and mystical that I prefer simply to wonder without caring to understand or believe. What we have here referred to incidentally leads to a broader reference to pelvic pathology. To understand the limitations of conservatism, especially as applied to subsequent conception, it is necessary to consider the complexity of the pathological processes which militate against every chance of the organs regaining their physiological function. Pus tubes are not simple. It is the rule to find them with multiple constructions, and with the tube simply a wire line, its lumen a wreck.

Many of the operations now successful were formerly failures because of the insufficient knowledge of how to deal with the wounded gut, how to make an anastomosis or do a bowel resection. Hence it is to be put

down as a postulate in pelvic surgery that no man has a right to attempt it who does not know how to deal with all the complexities of intestinal surgery. To know *when* and *when not* to stitch intestine is as necessary as to know *when* and *when not* to operate.

I cannot here refrain from paying my compliments to the Trendelenburg position, and to say that I find it just as useless in all abdominal surgery as it is for the operation of suprapubic cystotomy, for which it was invented.

The various modes of treatment that have ever been suggested are scarcely to be noticed. They must stand or fall in their results. It is fair to assume that where great results have been claimed, where the means have been problematical, the disease has been slight or imaginary; and so where some mechanical procedure, such as the Trendelenburg position, is said to have simplified and rendered easy all the difficulties of pelvic surgery, I must allow others to believe it who find the need of it, and say, "*Credat Judæus Apelles, non ego.*" I put it down that the long incision and elevated position are not necessary, because with a minimum of incision and a real surgical care the conditions that demand them presumably do not exist, and the advantages they offer are therefore mythical.

Just a word with reference to the assertion that with the Trendelenburg position there is no escape of fluid into the abdominal cavity. If there is a collection of any kind in the tube not over-distended, and the pavilion is attached to the ovary, it is an easy matter to enucleate the mass without rupture; but if the pavilion is attached deep down on the pelvic wall or to an intestine, what is to become of the discharging fluid? It is very easy to manufacture reasons that will not explain at all the actual condition of

things. Any operator or set of operators who argue from a condition of affairs different from the above are taking a stand upon insufficient data. Akin to all these undemonstrated claims are the tentative methods in certain conditions, such as gauze packing and vaginal puncture for tubal abscess. Now, it is a demonstrated fact that gauze does not drain anything but mere fluid matter; the débris of any sort whatever remains behind, and in the cheesy conditions which obtain in pus collections it is a matter of entire impossibility to clean out the cavities by such packing. Then, again, the vaginal puncture is as uncertain as any procedure can be that does not go to the bottom of the disease. We do not know primarily the extent of the disease, nor its surroundings nor its complications, and therefore we cannot drain it certainly by any one given puncture or method, except by enucleation.

After the enucleation is made the general cavity can be drained and the results are in nowise questionable.

What are we to say as to the removal of the entire uterus in the presence of tubal and ovarian disease? I take it that if all the pathologists who have ever examined uterine structure which is purely muscular — or, to be more exact, in great part muscular — were to make a report, there would be a general consensus of opinion that an abscess condition of the uterine walls, apart from broken-down fibroid, is the rarest condition imaginable, except at the cornu in case of pyosalpinx.

Now, the disease here is strictly definable and removable. It is therefore an unproven assertion to assume that the uterus is diseased and is the cause of the failure of cure in certain women whose appendages have been removed. To remove, therefore, an organ which in a great majority of cases is not even remotely diseased is

a seeking after means to obviate bad results that should otherwise be explained.

In conclusion, we are to remember that enough has been done of all kinds of pelvic work to decide what is the general drift of results, how far they are satisfactory and how far disappointing. The end here should justify the means, not in the hands of the disappointed experimentalist, but in the careful, painstaking surgeon.

PERSONAL EXPERIENCE WITH PUS TUBES: WHEN TO OPERATE; HOW TO OPERATE; AND THE RESULTS OF OPERATION. BY J. F. W. ROSS, M. D., TORONTO, CANADA.

The operations such as those I am about to set before you are a terrible tax upon the nervous system of the operator. They are, without exception, the most terrible of all surgical operations. I have seen a great deal of surgery in my short career, but have never yet seen any operations to compare with operations for the removal of pus tubes and ovaries from delicate women. I refer to cases in which the operator is wallowing in pus, where enormous abscesses of tubes and ovaries that have perforated into the bowel and into the bladder have to be peeled out from among dense adhesions of such delicate structures as the intestines—cases in which the operator is compelled to leave well enough alone, cease work after the removal of one side, wash out and close the abdomen, and go back after the other side on some subsequent occasion. Naturally a time arrives in an operator's existence when he does not care to sustain such a terrible strain. If he has a large hospital dependent on him it is only natural that he should suddenly become conservative—that is what they call it, conservatism. He goes back to his old routine treatment, in

which there is no anxiety, the hot-water douche, the vaginal tampon—and he will neither operate himself nor let others operate if he can help it. I believe there is a time when a man should not operate on such cases, but he has no right to prevent others from doing what they know and he knows is best for the patient—namely the enucleation of such pus sacs.

In my own experience I have met with four different varieties—namely, intratubal abscess, intraovarian abscess, intraligamentous abscess, and extraperitoneal abscess (that is, an abscess entirely outside the tissues forming the pelvic contents). The latter variety may be cured by puncture and drainage. The third variety, or intraligamentous abscess, must be opened and drained, but if accompanied by a pus tube that is not removed the abscess may remain uncured until the pus tube is removed. The second variety will occasionally cure itself by perforating downward and discharging its contents, but the patient will not remain well while the contracted and disorganized ovary is left *in situ*. The intratubal abscess should always be treated by removal of the tube. We have all been frequently amazed to find such large collections of pus in women who are not emaciated, but who are suffering from intermittent attacks of pain.

In looking back over my records I find that the fatal cases were chiefly those in whom gonorrhoea had been contracted but a short time before. I now believe that it is not wise to operate on these cases to soon after the primary infection. It is better to wait until the pus has become to a certain extent sterile and until the poisonous germ has become attenuated. The first case that died was one on whom I performed my second abdominal operation, and, not knowing the best method of procedure, I unfortu-

nately tore one ureter, and finally closed the abdomen without being able to complete the operation. After more mature experience, and after having made a pilgrimage to the old country, such a case would now be readily completed. The second case that died had gonorrhœa, but a few months before. The third case that died was operated on over a butcher shop in the country, in the middle of summer, with the flies thick about the place and stagnant water in the yard. The fourth case that died was very septic at the time of operation and had suffered from high fever for five weeks, and the abdominal cavity was studded with tubercular deposit. It would have been wiser in this case to have closed the abdomen and to have done nothing. The next case that died was saturated with sepsis at the time of operation, and was operated on after nine weeks of high temperature; the operation was done as a last resource. The next three cases that died were operated on after a recent infection with gonorrhœa; two of them were prostitutes. The next case that died had been operated on previously, and one enormous pus tube had been removed, but owing to her weak condition I was forced to desist and operate a second time. She died after the second operation, performed nine or ten weeks after the first. The gonorrhœal infection in this case was remote—that is, occurred two years before operation. The next fatality occurred in the case of a young woman, a prostitute, recently infected with gonorrhœa. The next death occurred in a woman who was in the last stages of septicemia and very much emaciated from her long-continued illness. In the next fatal case the death was attributable to an accident. A piece of omentum escaped through the opening from which the glass drainage tube had been removed,

and remained out beneath the dressings all night. The patient's vomiting was attributed to the anæsthetic, and I was amazed in the morning, on removing the dressings, to find the extruded mass black and gangrenous. Peritonitis set in and the patient died on the ninth day. The next death occurred as a result of rupture of the intestine and escape of fecal matter at some time after the operation. The outer coating of the intestine had evidently been injured during the enucleation of an enormous abscess of the left ovary, and a perforation occurred subsequently. She died on the second day.

The remaining sixty cases recovered. Some of them made an easy convalescence, others only recovered after a desperate illness.

The history of these cases previous to operation would fill an enormous volume. There would be in the volume many tales of woe. There would not be much in the volume that would be flattering to the so-called "treatment" received by these patients before surgical measures were resorted to. One woman has begun to live her life over again. She was for fourteen years bedridden; she grew old as the town grew up about her. The operation was very difficult, but, contrary to the expectations of all, she never had a bad symptom after its completion. She is at present enjoying life and in perfect health. Many of the other cases had been through other hands and had been under the care of various physicians, until at last they reached the care of the more enlightened young men of the rising generation and were transferred to me for surgical interference.

We must conclude, then, that there is a danger in operating on these cases at too early a period after the primary infection, and there is certainly a want of wisdom in deferring operation beyond a certain point. No case should

be operated on during the first acute attack, except under very exceptional circumstances. They will frequently linger for weeks with high fever, the fever will then to a great extent disappear and the general health will improve up to a certain point. Operations done at this time will be attended with a much lower mortality.

In obtaining the history of many of these cases I find that they have had an attack of inflammation of the bowels following either labor, miscarriage, gonorrhœa, an intra-uterine application or instrumentation, or some severe injury. Following this inflammation they have had, what has been called, low fever or typhoid fever. This fever has continued for some weeks; they have then apparently convalesced, but have never regained their strength. But a few cases never lose this fever and must be operated on to save their lives. The majority, convalesce, to a limited extent, and suffer from relapses, which come on at varying intervals. In each attack there is pain, tenderness, rise of temperature, and, in some of them, vomiting. A large number of women suffer from inflammation of the bowels and convalesce readily and completely. It is a fortunate thing for the human race that this is so. These seventy-three cases must be looked upon as exceptions to the general rule; and the exceptions are the cases for whom our skill is required, because the other cases recover so perfectly that no treatment is needed.

In giving the cause I have done so only after careful inquiry. In five of the cases the cause was not known. In thirty-six cases the cause was gonorrhœal infection. In some of these cases this was not ascertained until after the operation had been performed, and the information frequently reached me in a roundabout way, oftentimes through some professional brother who had attended the husband during the attack.

In three cases the disease was produced by tubercular deposit; in one case from peritonitis due to the presence of a uterine fibroid; in one from peritonitis following a fall from a carriage; in one case from inflammation following an intrauterine application; in one from the passage of a sound into a uterus that was supposed to contain an ovum impregnated about two weeks before. Some of the cases suffered from metrorrhagia, so that they closely simulated cases of fibroid tumor; many of them suffered from menorrhagia; and a large majority suffered from dysmenorrhœa. The length of time the disease was progressing varied from a few months up to fourteen years. Many cases were mistaken for pelvic hæmatocele or fibroid tumor, and many of them were looked upon as cases of pelvic cellulitis.

I am firmly convinced that none but those who have had the advantage of a special training in this department of surgery should undertake the operations for the relief of cases such as those under discussion.

There is a certain method of procedure that should be followed in each of these cases. In the first place, it is necessary to draw up the anchored omentum and to do so rapidly. The portion from which an anchored omentum has been peeled will not bleed, but the proximal portion of the omentum itself will bleed freely, and this bleeding should be carefully attended to. If, after it has been placed temporarily to one side, wrapped in a sponge, while the rest of the operation is being carried out, it is found that it still bleeds, no time should be lost, but fine ligatures should be applied around the bleeding portion and the rest should be cut away beyond the ligatures. The omentum should never be tied with coarse silk; the very finest silk should be used for this purpose. I fre-

quently tie off a shred of the omentum to prevent intestinal obstruction by the constriction that may be produced by the tags that are left after the anchored portions have been detached from the parts to which they are adherent. The enucleation should always be begun at the uterine cornu. The uterus should first be found before any peeling is commenced; after this has been located the operator has a valuable landmark. The line of cleavage between intestine and tube can only be made out by the tips of the index and middle fingers, and must be made out in the dark recesses of the pelvis. The peeling must always be made from the centre outward and forward up against the posterior layer of the broad ligament. The operator who begins his enucleation at the infundibulo-pelvic ligament or from the front of the broad ligament will soon find that he has made a terrible mistake; large veins will be opened and the hæmorrhage will be severe, the cellular tissue will be invaded and damage will be done to important parts. I find I receive a great deal of assistance from a small laryngoscopic mirror fitted with a mouthpiece, as used by Tait, that it may be held between the teeth. With the aid of sponges to hold back the constantly prolapsing intestine, the operator may view from time to time the field of operation, and may thus frequently avoid injury to a portion of adherent intestine. The hæmorrhage can usually be controlled, if the operation is done with the precautions above mentioned, by sponge pressure. But if the broad ligament and cellular tissue of the pelvis have been invaded, sponge pressure will not be sufficient to control the hæmorrhage. In a recent case I injured a small branch of the internal iliac vein. This was readily discovered by means of the mirror and the bleeding points tied. It is much better not to attempt to

remove a tube or ovary, filled with pus, intact, if such removal is fraught with danger to any portion of adherent intestine. At times it will be found by the aid of the mirror that the outer coat of the intestine has been injured, and when this is so I believe it wise to draw the serous coat together with a few Halsted sutures.

Drainage and Flushing.—In the list of cases it will be found that drainage was used in sixty-one cases, and thirty-nine cases were flushed. In the cases that died two were not flushed, while eleven were flushed thoroughly. All the fatal cases were drained. I am firmly convinced that a prolonged drainage is the correct procedure in such cases. Among my earlier cases I used prolonged drainage. In the intervening period, when there was such an outcry against drainage, I attempted to shorten the length of time that the drainage tube was left in, and I found that the cases did not do as well. A secondary rise of temperature took place, some inflammatory action set in at the bottom of the sinus from which the drainage tube had been removed, and this delayed convalescence. In my later days I have returned again to prolonged drainage, and intend to pursue that course in future. The method I adopt is about as follows: The drainage tube is inserted and left *in situ* for about six days, being drained at intervals and packed with iodoform gauze after about the second day. I never use iodoform gauze packing until all danger of secondary hæmorrhage is over. On one occasion I packed the tube, and on removing it a couple of ounces of blood were drawn up from the pelvis by means of the sucker, and yet this hæmorrhage did not show through the gauze. Had there been no gauze it would have been readily discovered.

About the sixth day a rubber drainage tube is passed down through the

glass one (to act as a guide when the glass one is reintroduced), and the glass one removed, thoroughly washed, and replaced for a day or two longer; by doing this I can more readily keep it aseptic. At the end of the eighth day a rubber drainage tube is placed in the sinus and the glass tube removed. The rubber tube is kept packed with iodoform gauze, removed and replaced two or three times a day, and shortened daily. In this way a sinus is kept open down to the seat of operation, and if any débris left behind during the peeling off of friable and poisonous tubes, should become a focus of suppuration, the pus will find the readiest exit through the old drainage-tube sinus. If the abdominal wall is completely closed over and firmly healed together, any such pus can only find an outlet by burrowing downward, and a sinus may thus be left that cannot readily be closed.

The danger of the infection of the peritoneum through the drainage-tube track is a myth. After a very few hours adhesions form of intestine to intestine around the tube and prevent any such infection.

Hernia is certainly more liable to occur as a consequence of drainage, but such a hernia is only a slight matter when compared with the life of the patient. It may be practicable, in some institutions where there are numbers of assistants, and assistants trained in bacteriological research, to examine the pus from a pus tube or suppurating ovary with the microscope at the time of the operation, but such examination is certainly not practicable in my work. I therefore think it is best to adopt drainage in all doubtful cases.

Flushing, to be of any service, must be thorough, and a large quantity of water should be used. It will be found to produce an alteration in the pulse as soon as it is begun, but after it has been continued for a few mo-

ments the pulse again slows down. The pulse is at first raised by the application of the hot water to the peritoneal cavity, and the respiration is increased in frequency. Such a stream of water should be used as will float out clots and pieces of débris, as well as remove pus.

It is advisable during operation to ascertain the exact condition present by going slowly. If the operator is uncertain he should pack the intestines back with sponges, and proceed step by step until he is convinced regarding the condition with which he is dealing. I have seen an operator remove a large portion of the rectum; it was peeled out from among adhesions and tied off. Such a mistake, it seems to me, can only occur as a consequence of too great haste.

The ligation of the pedicle is a matter of very great importance. In his anxiety to remove all diseased tissue the operator scoops out the inside of the tube with his scissors, and in doing so is very liable to diminish the bulk of the tissue beyond the ligature, and in this way the ligature may become loosened. I have seen a pedicle bleed as a consequence of this procedure, but the bleeding was fortunately noticed before the abdomen was closed and a second ligature applied. The tissue of a pus tube, like the tissue of a fibroid tumor, has a tendency to shrink; the ligatures should therefore be applied very tightly. I have been forced on one or two occasions to ligate a portion of thickly adherent tissue in the neighborhood of the infundibulo-pelvic ligament, owing to the fact that the mass was densely adherent to the rectum. During the process of peeling one is very liable to produce a tearing at the outer end of the tube in the edge of the infundibulo-pelvic ligament, and, as this torn portion is beyond the seat of ligature, it is liable to bleed. I was forced on one

occasion to reopen a case for hæmorrhage from this source, but fortunately she made a good recovery.

To test the amount of hæmorrhage a drainage tube should be inserted during the interval of time that is occupied by passing the sutures. The amount of oosing can thus be judged, and if excessive the bleeding points should be brought into view by means of the mirror and sponge. Sometimes a large vein will be found torn and the blood will be found running from it very freely. On such a point a small ligature should be placed; this can be done without difficulty, and the operator will feel much more comfortable for the rest of the day. In some cases, however, a continual oosing may keep up and the patient may lose a large quantity of blood.

Another difficulty to be met with sometimes is prolonged hæmorrhage from enucleation of a large mass such as that in one of my cases, where the hæmorrhage was terrific. I worked as rapidly as possible and used as much sponge pressure as possible during the operation, endeavoring all the while to reach the pedicle. Owing to dense adhesions around, it was impossible to reach this until the very last. It was feared in the interval that the patient would die on the table before the hæmorrhage could be checked. The abscess of the ovary ruptured and flooded the abdomen with pus, and this complicated matters. The omentum was nearly as thick as the palm of a lady's hand and firmly adherent to the enormous abscess of the right ovary. The patient was so low that those standing by could not feel the pulse, and I was advised more than once to close the abdomen, with strapping, so that she would not die on the table. Arms and hands were bandaged during the operation to keep enough blood in the head to nourish the brain. As soon as the pedicle

was reached and the loss of blood controlled, the completion of the operation did not apparently increase the gravity of her condition. We felt that it was not wise to remove her from the operating room, and she was left there until the next day. To those who have not done these operations such statements may appear incredulous, but there are many of my friends ready to verify them.

Another case was operated on during an acute attack of peritonitis produced by escape of pus from a pus tube. The pulse was 160 when she was placed on the table, and nobody expected her to recover. She made a somewhat prolonged convalescence. In this case the drainage tube was used, and removed on the fourth day.

There is a class of cases in which nothing can be reached except one dense plain of matted tissue covering over the inlet to the pelvis. In such cases it would be necessary to remove bladder and rectum in the attempt to remove tubes and ovaries. I have operated two or three such cases, have endeavored through a prolonged period to get some opening into the adhesions, and have been forced to close them up without removing anything. One such case had been ill a long time. I peeled off thickened, cartilaginous-looking omentum and removed it, but even then it was impossible to distinguish between intestines, tubes, and ovaries. After working for considerable time the pulse began to rise until it reached 120, and I came to the conclusion that my only course was to desist. The patient has been under my observation ever since. She has been ill off and on, suffering from distension and vomiting, together with symptoms of obstruction of the bowels. After the attacks of inflammation she passes bloody urine. I presume the absorption of the ptomaines from the inflamed peritoneum produces in some

way a congested condition of the kidneys. In the intervals no blood, casts, or albumen are to be found. It is now two and one-half years since the operation; the patient is able to go around and do light work, but I am afraid is a confirmed morphine-eater. I have noticed in many of these cases the unusual color of the fat lining the abdominal cavity; it is of a deep yellow color and looks like the fat of a dead chicken. In several cases I have found small cysts of the peritoneum. They are not so infrequent as we might suppose. Frequently there is a large cyst, filled evidently with fluid that has collected during some attack of inflammation. After a serious peritonitis this fluid has been left between the intestines, absorption has not taken place, and the cyst has resulted. Other similar collections between other folds of the intestine had temporarily united by adhesive inflammation. By the vermicular action of the bowels these eventually become detached and pendulous, and hang like grapes from some portion of the peritoneum. I have tapped them and left the sac behind without perceiving any difference to the patient. I have removed them by fine ligature, owing to the fact that the grape-like cysts have a tendency to bleed if cut off without having been previously ligatured. After the pus tubes have been removed the previous existence of this condition has no influence whatever on the convalescence.

In these operations the sponges should be very carefully counted. This should of course be done before any abdominal operation, but should be carefully done in such cases as these, because during hæmorrhage sponges are frequently being put into the pelvis to control the bleeding while the rest of the enucleation is proceeded with. In this way a sponge becomes coated with pus and blood, and after the fingers have been

peeling off adhesions for some time their sensitiveness is to a certain extent lost and such a sponge is very apt to be overlooked.

If fecal fistulæ occur and feces are passed through the drainage tube the patients should be let alone; the less they are interfered with the better will be the result. Adhesions will form, and though feces be passed out through the drainage tube the patient will frequently recover. These fistulæ are not the result of the presence of the drainage tube, but are due to injury of the outer wall of the intestine. When a very firmly adherent rectum has been peeled from pus tubes it is unwise to give rectal enemata early after operation. One patient, I think, died as a consequence of an enema finding its way, through a perforation in the rectum, into the abdomen. In another case the nurse was giving an enema, and was amazed and frightened to see the fluid coming out through the drainage tube; the patient, however, made an excellent recovery. These fecal fistulæ have a tendency to heal, or they may be operated on at a subsequent date and closed. There is a peculiar bile-colored stain to the fluid drained from the peritoneal cavity that is met with occasionally. I am unable to state the precise cause of this staining. The fluid does not give the biliary reaction. In two or three cases in which I have seen this deep yellow tinge the patients have died; in one case it was accompanied by intense jaundice.

Results of Operation.—In some cases the menstrual flow ceases. There is usually a slight flow, coming on a few days after operation. In some cases this may return no more. I have one patient who has been menstruating regularly ever since her operation nearly four years ago. I was at a loss to know why this was until I looked up my record and found that both tubes were removed,

but that one ovary could not be found, owing to the fact that the tube on that side had burst into the broad ligament and produced an abscess of the broad ligament that was drained. This proved conclusively to my mind that the removal of the tubes did not have much influence on the function of menstruation. The patients pass through the usual symptoms of the menopause. Those who have become emaciated by the long-continued supuration rapidly put on flesh. When dyspareunia has existed before operation, it disappears after convalescence, and the patient is much less unsexed in this respect than she was before. The patient who before operation has been living in her bedroom is now enabled to live in the outer air and is transferred from the invalid carriage to her own feet; the doctor is not now so frequently a visitor to the house as in former years, and happiness is restored to the home.

THE PRESENT STATUS OF THE TREATMENT OF PELVIC INFLAMMATION;
OR, HOW SHALL WE DEAL WITH
PELVIC INFLAMMATORY TROUBLES?
BY WALTER B. DORSETT, M. D.

The following conclusions of the author are:

1. Pus in quantities is hard to deal with down in the pelvis in laparotomy cases, and, if possible, should be evacuated prior to taking out the tubes and ovaries, either through the cul-de-sac of Douglass, or, if between the layers of the broad ligament at the side of the uterus, do your laparotomy at some future time.

2. Pus sacs in the tube near the uterine end of the tube can be evacuated through the uterus by packing the horn.

3. Parametritis, or cellulitis of the ancients, is, except in rare instances, a secondary trouble, due to a foul

uterine cavity. Clean out the cavity and stop the source of poison, and you do the best thing possible to be done.

These are my convictions and are honestly stated. Take them for what they are worth and give us yours, and let us compare notes.

TREATMENT OF DISTENTION OF THE
FALLOPIAN TUBES WITHOUT LAPA-
RATOMY AND REMOVAL. BY FRANK
A. GLASGOW, A. B., M. D.

I present to you to-day an article on the modern treatment of distention of the Fallopian tubes.

The question is, can we cure tubal disease in any other way? I say we very often can. We can learn from what Nature unaided can do. We have all seen cases of acute pyosalpinx, even accompanied with peritonitis, recover from their acute symptoms and, after a discharge has taken place from the uterus, become perfectly well. We have looked for distended tubes later on and not found them. Those tubes were undoubtedly distended and were emptied. We assist Nature to cure in other locations in the body, why not do so here? Catheterization has been tried and found impracticable. Very few have claimed that they could succeed. I doubt if it has ever succeeded in a case that needed it. There were cases reported years back in which, after a curetting, a discharge of pus took place, followed by recovery; yet members of our profession did not take the hint. W. B. Dorsett was the first to advocate the dilatation of the uterine cavity with the object of opening the uterine end of the tube. He advocated this for those cases only where the tube was enlarged close to the body of the uterus, and presented some striking cases of its success. He advocated packing the uterine cornu next to the tube. For myself, I doubt if we can

pack one part of the cavity any more than another. Dorsett's idea seemed to me good and I tried it, but not in exactly the kind of cases for which he recommended it. I have always noticed that the uterine ends of the tubes which I removed were pervious, also those which I saw removed by others. I did not consider gonorrhœal inflammation as an adhesive inflammation, hence I did not believe the generally accepted opinion, viz., "that the tubes were closed by adhesion after they had been inflamed." I consider this a false teaching and probably responsible for our neglecting even trying to open the tubes. Knowing that the tubes are more generally distended at their distal extremity and that the inflammation is not an adhesive one, we are naturally led to look for the obstruction. We can account for it by swelling of the mucous membrane of uterine tissue immediately around the uterine ends of the tube, which is the narrowest portion. This I believe to be the site of the occlusion in the majority of cases. The results obtained after packing the uterine cavity can easily be explained on this supposition. If this is so it is not hard to believe that we may have an emptying of the tube after we have applied antiseptics and pressure to the swollen mucous membrane. I believe another element comes to our aid, and that is a stimulation of the peristaltic action of the uterus and tubes. This is not difficult to imagine.

I do not agree with Dorsett that it is the actual distention of the cornu which opens the tube, but believe that it is a subsidence of the inflammation brought about by pressure and antiseptics.

I prepared a number of tents of elm bark and sterilized them, some by means of heat and others by an alcoholic solution of bichloride of mercury 1 : 4000. These I have used

almost exclusively for about nine months past. They can be partially broken at frequent intervals, so that they will easily follow the curve or flexion of the uterus. We can use them when the uterus is too sensitive to permit the use of gauze. We can gradually slip in tent after tent, first dipping them in glycerine or water for a moment, until the cervix is full. I now place a wad of cotton, tied with string, just against the cervix; the tents are cut off to a length which will just permit them to entirely enter the os externum without pressing on the fundus; they have each a short string attached to them. This is kept up for a number of days, the patient being kept in bed. Sometimes the dilatation causes pain; often none. If, when the uterine canal is large enough to admit the finger, there is no discharge of pus, with relief of the symptoms, I anæsthetize and curette. I now pack with gauze and repeat for a number of days.

I cannot at present recall a case of tubal distention where I did not get some discharge after packing with gauze or dilating with tents for some time. Very often a very offensive watery discharge comes through the packing, even soaking into the bed; I do not refer to the slimy discharge from the tents.

CASE I.—October 12th, 1893. Complained of much pain in the right inguinal region. One week previous to entrance had a severe chill. I found enlargement of the right tube, lacerated cervix uteri and perineum. I packed the uterus with iodoform gauze, without anæsthesia, for ten days without effect. The treatment was now interrupted for ten days on account of catamenial flow. Three days after the packing had been resumed a fetid discharge began. The pain disappeared and the patient sat up next day. The second day after there was

no sensitiveness, except high up and on firm pressure; tube infiltrated but smaller, and fundus fixed; patient feels well and went home on November 6th. She returned on November 30th, having had a chill, followed by fever. I found a hard mass to the right of uterus, firmly attached to the sacrum. The patient was chloroformed on December 2d, and the examination showed the right tube to be, near the uterus, of the size of the thumb; the fundus attached posteriorly. Left side of pelvis free. I curetted the fundus and packed. Two days later a free discharge of watery fluid took place; no pain afterward. I washed out uterus and packed for a few days. She was discharged on December 20th, not quite well, but steadily improving. I heard later that the improvement continued.

CASE 11.—Gave a history of having led a gay life a few years ago, about which time she had a miscarriage and also a gonorrhœa. After the gonorrhœa she was attacked with peritonitis and was for a long time in a hospital in New York. She was warned by Dr. Mundé at parting not to allow any doctor to examine her, for it might cause peritonitis. This was about two years before I saw her on May 21st. I found her in bed with her knees drawn up, suffering intensely; temperature $101\ 1\text{--}2^{\circ}$; exquisitely sensitive all over abdomen and all around the uterus. No satisfactory examination could be made. I ordered hot douches, hot poultices, and a line, and had to give her a little morphine. The next day she was removed to the hospital, where she showed a temperature to $104\ 1\text{--}2^{\circ}$. I began to use bichloride elm tents at once, and continued the hot applications and salines. By the second day a free discharge of bloody pus came away and the pain ceased. Two days after I ceased to use tents and examined her. I now found the left

tube small and the right tube the size of an egg. The uterus was pushed to the left and anterior; no pain, no fever, and little sensitiveness. From now on until May 30th there was a bloody discharge; at this date both tubes were found thickened but apparently empty; there was a little sensitiveness. She left the hospital on June 8.

This patient became perfectly well. On June 26th, as she had some leucorrhœa, I introduced a single small tent. This, I very much suspect, interrupted an early pregnancy, for three days later she had severe cramps; no tubal distention. The next day a fetid discharge took place. There was now a bloody discharge until I curetted the uterus under anæsthesia on July 12th. The tubes were not involved. I packed the uterus for a few days. She is now probably pregnant again, but perfectly well.

CASE III. — I had one case where, after packing the uterus, I got a discharge, but the patient was not relieved. I now opened Douglas' cul-de-sac, and in separating the gut from the posterior surface of the broad ligament on the right I opened the abscess, which was in the ligament. I packed in a strip of gauze, and, with subsequent drainage, patient recovered completely. This may be considered as a type of cases which the advocates of laparotomy would say were not suited to such a procedure. In many cases it is impossible to tell beforehand whether this is the condition or not. A good rule is to try to empty the tubes, and if we succeed, and the patient still does not improve, we can then perhaps open the abscess from below or perform laparotomy. I prefer opening from the vagina, for I have never lost a case where I did this, nor had hernia result. I have never opened a gut but once, and this I did carefully, as I suspected it to be a gut. I sewed it up and had no trouble.

During the last year or so I have had more than twenty cases of distention of the tubes and have performed laparotomy only on one. In this case I only broke up the adhesions and closed the abdomen. All the other cases were either very much improved or cured.

I hope I have said enough to induce you to make a trial of this method of treating tubal distention and decide for yourselves what it is worth.

I would also recommend you to try slippery-elm tents for the routine treatment of endometritis. Make the tent as small as a match, or even smaller, and dip it into the medicine which you wish to apply to the endometrium, introduce it, and keep it there for several hours with a cotton tampon. You will get a mucilaginous antiseptic application to the endometrium, which is far more efficient than any application made on an applicator.

(To be Continued.)

THE INTERNATIONAL SOCIETY OF CONGRESS OF GYNÆCOLOGY AND OBSTETRICS.

THE second meeting of this Society will take place in Geneva, Switzerland, September, 1895.

The questions for discussion are:
(1) The Treatment of Eclampsia;
(2) The Surgical Treatment of Retrodeviations of the Uterus; (3) The Relative Frequency of the Different Pelvic Strictures in Different Nations;
(4) The Best Methods of Suturing the Abdominal Walls in order to avoid Eventration; (5) The Treatment of Pelvic Suppurations.

From this programme it will be seen that this session will be most important to all those interested in gynæcology and obstetrics, and, from the fact of the congress being held in one of the most beautiful cities of the continent, it is to be hoped that many of the profession of America will attend. We congratulate our *confrères Suisses*, and wish them every success in their undertaking, which we feel sure will be crowned with honor.

C. G. C.

Chicago Gynæcological Society.

At the sixteenth annual meeting of the Chicago Gynæcological Society, held Oct. 19, 1894, the following officers were elected to serve the ensuing year: Dr. Franklin H.

Martin, President; Dr. A. J. Foster, first Vice President; Dr. J. C. Hoag, second Vice President; Dr. H. P. Newman, Secretary; and Dr. T. J. Watkins, Editor.

Philadelphia Obstetrical Society.

The meeting of the Philadelphia Obstetrical Society was held November 1st, 1894, President Dr. Barton Cooke Hirst in the chair.

A CASE OF SUDDEN DEATH FOLLOWING VENTRAL FIXATION. BY DR. FRANK W. TALLEY. ABSTRACT.

Sudden death following cœliotomy is of sufficient rarity to warrant record, especially where the accident occurs in cases where there has been little or no disturbance of the abdominal contents. In the case to be reported nothing was done beyond the separation of tubercular adhesions and the fixation of the uterus. The patient was a well-nourished girl, 25 years of age. She was admitted to the Polyclinic Hospital, October 10th, 1894. There was no history of tuberculosis in her ancestors and no evidence of pulmonary or cardiac disease. For three years she had suffered from a burning, dragging pain in the left ovarian region, extending down the left thigh, with pain in the back, constipation,

headache, and nervous debility. The uterus was anteflexed, retroverted and fixed. Both ovaries were prolapsed behind the uterus, large and tender, and bound down by inflammatory adhesions.

October 11th, the abdomen was opened and the uterus and ovaries freed from adhesions. The fundus of the uterus was then secured at the lower angle of the wound by two fine silk sutures. The patient did well, and on the eighth day the stitches were removed. During the next three days she seemed entirely convalescent. At ten o'clock on the eleventh day she seemed to be in high spirits, but two hours later she was observed to throw up her hand and apparently had an epileptic fit. She then became cyanosed and exhibited Cheyne-Stokes respiration; pulse eighty per minute. In six minutes from the onset of the symptoms, respiration ceased. The heart continued to beat for some time after the cessation of respiration. Artificial respiration was kept up for some time,

but without avail. An autopsy was not permitted, and therefore the cause of death can only be a matter of presumption. From the rapid onset of death with marked respiratory symptoms, one would infer that the respiratory centre had been the seat of some rapidly developing interference. It would seem probable that an embolus had entered the general circulation and occluded an artery supplying the respiratory centre. Where such an embolus could have come from, as no vessels were ligated, must be a matter of conjecture.

REPORT OF A CASE OF PUERPERAL
PELVIC ABSCESS, WITH SOME RE-
MARKS ON SEPTIC INFECTION.
BY DR. GEORGE M. BOYD. AB-
STRACT.

In speaking of the sites of infection, it is convenient to divide the parturient canal into three portions,—the uterine portion, the cervical portion and the vaginal portion. Septic infection must develop in one of two ways: either the poison is introduced from without, or the patient is self-inoculated. The uterine portion of the canal would seem the least liable to primary inoculation, as it is the furthest from external contamination. The cervical portion is nearer the exterior and is liable to suffer from accidental injuries favoring infection, while the vaginal portion is constantly in danger of infection. It would seem that this is the most frequent site of direct inoculation. In observing twelve hundred puerperal cases at the Philadelphia Lying-In

Charity, the author had been impressed with the freedom of the cases from symptoms of uterine infection.

The non-infectious fevers being excluded, an occasional elevation of temperature must be explained by wound infection. The milder forms of this infection are not difficult to combat and are for the most part probably due to auto-infection. The case to be reported is of interest, not only as regards the probable site of infection, but also as to the wisest method of treating these cases.

The patient, an Italian, aged 26 years was admitted to the hospital March 20, 1894. Six weeks before, she had been delivered by a mid-wife. She soon developed fever with a temperature of 100° to 102°, with symptoms of septic infection. On examination a mass was found filling the right side of the pelvis. A tumor could also be felt in the right groin.

She was operated on March 22. Although there was no fluctuation, it was deemed wisest to cut down parallel to Poupert's ligament, so that if the accumulation were extra-peritoneal, it could be evacuated without opening the peritoneal cavity. In this way an abscess was reached, from which two ounces of pus were evacuated. The cavity was then washed out and an iodoform gauze drain introduced. The symptoms at once improved, and three weeks later she left the hospital, well. Three months later, examination failed to reveal any evidence of the original trouble, and she had improved much in flesh and strength. This particular case seemed to be one of infection through the

vaginal portion of the parturient canal, and it seems possible that during the long illness, the uterus never became infected.

ABSTRACT OF DISCUSSION.

DR. W. REYNOLDS WILSON:— Probably Dr. Boyd's conclusions with reference to the seat of infection may be open to discussion. It is probable that the endometrium is more frequently the site of the infection than are other portions of the canal. This is so for two reasons. In the first place the sinuses at the placental site are occupied by large clots, which become readily infected, and from this location the putrefactive and septic elements are absorbed into the general circulation. The lacerated vessels of the cervical canal are also liable to be plugged by similar clots, but not to the same extent, so that infection from decomposing material is more likely to occur from the placental site than from the cervical canal. In the second place, the infection is more likely to occur higher up in the uterus on account of the more active development of the lymphatic tissues, and absorbent vessels at this point. The lymphatics in the lower portion of the canal are not nearly so highly developed as those draining the fundus of the uterus and accompanying the ovarian or spermatic arteries. Therefore, as a matter of discussion, I would suggest that the infection is more likely to occur from the endometrium than from the lower portion of the uterine canal, owing, in the first place, to the formation of clots at the placental site, and in the second place to

the more active development of the lymphatics in this position.

Again, the results of local treatment in the early stage of septic infection prove that the endometrium is the source of infection. When proper treatment is properly applied to this portion of the canal, the early symptoms are likely to subside at once.

DR. A. J. DOWNES:— During the past year I had a case which, in its clinical history, very closely resembled the one reported. The patient was a primipara, confined in December, 1893, under circumstances which seemed to preclude any chance of infection. She had a normal puerperium and was in good health for six weeks, when she began to suffer, and in eight weeks she was in bed. On examination, I found a small tumor. The case had all the clinical features of a case of abscess. By the eleventh week the mass had become quite large. There was no chill, but there was evidence of tuberculosis. I operated eleven weeks after delivery and found a large tuberculous tube, about three times its normal size, and a large fibroid mass in the sigmoid flexure of the bowel. This case seen by one who had not attended her previously would probably have been regarded as one of pelvic abscess. As regards treatment, I would state that I left this tuberculous mesentery, and the patient is now in excellent health.

DR. J. M. BALDY:— Dealing with the subject in a general way, I recognize three kinds of pelvic abscesses. There is often a confusion of terms in discussing this matter. In the first place we have pus tubes,

and ovarian abscesses ; in the second, true intra-peritoneal abscess, and in the third, cellulitic or extra peritoneal abscesses developing in the connective tissue. This is the rarest abscess of all. In my own experience I have never run across one of these extra-peritoneal abscesses, but I do not doubt they occur. My failure to meet them is perhaps explained in part by the fact that I do not deal so extensively with obstetrical work as some others. All of the pelvic abscesses that I have run across in opening the abdomen—and that is the only way that we can have direct proof, by opening the abdomen and knowing the exact relations—have been cases of the intra-peritoneal variety.

While I do not doubt that extra-peritoneal abscess may occur, I would rather question the statement that the case reported belonged to that group. I question its being one of these connective tissue abscesses. The history is that the case was operated on eight weeks after labor and only a small amount of pus found. The abscess is opened above Pöupart's ligament, and there was no chance of determining the relations to the pelvic organs. Many of the connective tissue abscesses of which I have heard have been large accumulations of pus. The small amount of pus is what is found in the ordinary ovarian abscess. The length of time after labor is also a factor, although not a prominent one, that would go to substantiate this opinion. Again, the negative fact that all trace of disease has since disappeared goes to prove nothing at all,

for we know that in these acute cases of pus tubes, if the pus is evacuated by any means, such as vaginal puncture—which is a bad practice—examination weeks or months afterward may fail to show any trace of disease. The patient is, however, always in danger of recurring attacks. This fact then does not go far in the way of proof that it was a cellulitic abscess.

As far as the method of approaching these abscesses is concerned, if one can diagnose that the abscess is sub-peritoneal, there is no question that the peritoneal cavity should not be opened. The abscess should be opened through the vagina preferably, or if it is pointing toward the abdominal wall, which is exceedingly rare, it could be opened at that point. I conceive, however, that it would be impossible to make that diagnosis, and therefore, as a matter of practice the operation should always be by abdominal section. If this shows that the abscess is sub-peritoneal, the abdomen can be closed and the abscess approached from the outside.

DR. WILLIAM S. ASHTON :— Last Spring I had a case occurring in the wife of a physician in the interior of the State, with a history much the same as that given to-night, and which would lead me to rather suspect that this was not an extra-peritoneal collection of pus, but that the ovary rather than the tube was the seat of the abscess, as it was evacuated so readily. The history was as follows : Five or six days after delivery the patient developed septicæmia. Curettement was performed with prompt

relief to the symptoms, but from that time on the general condition was not very satisfactory. There was considerable pain in the right iliac fossa. I saw her ten weeks after confinement and found a condition of affairs precisely as described by Dr. Boyd, namely, a blocked pelvis on the right side, with a distinct mass on supra-pubic examination. I did not make a lateral incision, because I agree with Dr. Baldy that it is impossible to determine prior to section what we have to deal with. I made a section and found that the trouble was in the ovary, which contained two and a half ounces of pus. This was adherent to the abdominal wall, the head of the colon and the appendix. The operation required the complete removal of the uterus and appendages. Also had to remove the appendix, which was gangreous and on the point of rupture, and an opening was left in the colon. Had I made a lateral incision, I could have evacuated the pus, and I am certain that this, with drainage, would have resulted in a cure such as Dr. Boyd has described, but I think that would have been bad practice. In this case the tubes were perfectly normal. The infection seemed to have come through the lymphatics of the broad ligament, infecting the ovary.

I think that the point brought out by Dr. Wilson, that the endometrium is the primary source of trouble in these cases, is well shown by the fact that in the vast majority of these cases of sepsis the early use of the curette and flushing gives rapid relief.

DR. ROBERT E. DICKINSON, of Brooklyn:—I have a vague recollection of certain cases that would seem to contradict the statement of the laparotomists that most pelvic abscesses are within the peritoneum. We who are called in consultation in cases of puerperal septicæmia seem to encounter more of the cases such as have been described to-night. Four cases come to my mind, in two of which the post-mortem confirmed the diagnosis. In both of these cases there was extensive burrowing of pus from the pelvis up as high as the diaphragm, with a thin place in the groin, through which an opening could be readily made and through which a large cavity could be treated. One of these cases had well marked nephritis, and died. The post-mortem showed distinctly that the sepsis had developed post-partum, and there was no trouble in the peritoneum to complicate it. The second case died of pure sepsis.

I had twice opened above Poupart's ligament and evacuated collections of pus where there seemed to be no peritoneal involvement, beyond the deposit of lymph in the region of the abscess cavity.

DR. M. PRICE:—I am a little surprised at the position taken by gentlemen in regard to pus and the ability to locate it. I mean to say whether it is in one place or another after the disease has existed any length of time. I can not do it on the living, and I have never seen any one do it satisfactorily on the dead. I have seen probably one hundred cases of puerperal peritonitis, and in this num-

ber many cases where the peritoneum contained not ounces but pints of pus, and where flushing and drainage was all that was necessary for recovery, and I am positive that in those cases no one could say whether the infection had come from the tubes, from the endometrium, or whether it had come from some injury or violence at the time of labor. In nearly all the cases the trouble came on too late after labor to say that it was from an injury, but when it is said that pus can not exist in the pelvis without the infection has come through the uterus or appendages, it is a mistake, because I have opened abscesses in the groin and in the loin which seemed to be intra-peritoneal, and I know they were not connected with the uterus, because the patients were males. I did not go deeper than the abscess cavity and both of the cases made good recoveries. I see no reason why Dr. Boyd's case could not have been one of abscess outside the peritoneum, having nothing to do with the uterus and nothing to do with the confinement. There are so many labors that we can not say that a woman may not have as a coincidence an abscess somewhere about the pelvic bones, along the crest of the ilium or along Poupart's ligament that has absolutely nothing to do with the uterus. Only a little while ago I reported a pelvic abscess in a boy with a gallon of pus. Had the patient been a girl, I should probably have said that it was a pelvic abscess without uterine or tubal involvement. We are often too loose in our statements when we say that we know that the trouble is not tubal, but in

this case, the fact that no sign of disease remains is almost proof positive that there was no tubal disease. I do not believe that these cases will get well and remain well if the trouble originates in the tube or ovary.

In Dr. Ashton's case where he states that the tubes were not diseased and the head of the colon and appendix was gangrenous, I should judge that the infection had come from a preëxisting appendicitis.

DR. G. BATTON MASSEY: — There seems to be two sides to this question. One takes the position that the old surgical axiom that where you find pus it should be let out at the most dependent and best point for drainage is correct, while the other side seems to take the position that if it is a woman that is suspected of having the abscess, you must dig around among her vital organs to see if it is not something else; then after probably doing untold damage you may adopt the old fashioned surgical procedure and open and drain. And this illustrates again the saying that has been put forward by me that we are apt to fall into fads and lose our hold on principles.

It seems to me that in cases of this sort the diagnosis ought to be easily made before the knife is used, adopting Dr. Ebedohl's plan of aspiration. Surely the presence of pus could be discovered before operation. This operation has been done by Dr. Ebedohl a number of times without bad results. Of course, as has been said, if you have a pelvic abscess of the extra-peritoneal kind, or an ovarian

abscess or a typical pus tube, there will be agglutination of neighboring organs, and if you dig for them you will find them, but that is not positive proof that you should dig for them.

DR. CHARLES P. NOBLE:— I did not have the pleasure of hearing Dr. Boyd's paper, but since I last addressed the Society on this subject, I have had two cases in addition to those previously reported. Some time ago I saw a case on which Dr. Joseph Price came near operating. If he had opened that case, he would have had one case in which there was pus in the broad ligament. The patient was a Russian Jewess and I saw her some time after labor. The labor was followed by sepsis, and in that case the broad ligament was riddled with abscesses and the omentum was adherent. Of course there was salpingitis, but there was no pus in the tube. The broad ligament had the omentum fastened to it, but the disease was plainly primary in the broad ligament.

The second case was a patient of Dr. Dunn and was seen in East Chester. The confinement was followed by sepsis, and some weeks later I saw her. She had had a temperature of 102° to 103° for some weeks, with a large mass in the left groin. I opened that without opening the belly. The patient recovered and Dr. Dunn writes me that he is unable to find any pelvic mass in the left side. In this last case, as the belly was not opened, it is impossible to speak of the condition of the appendages, but I have every reason to

believe that it was a typical broad ligament abscess.

DR. BALDY:—What reasons have you for believing that this was a broad ligament abscess?

DR. NOBLE:— If this had been an abscess connected with the tube, I do not believe that it would have gotten well by simply opening it in the groin. With a suppurating tube at the bottom of the cavity, I think that a sinus would have been left. The wound closed, the woman feels well and the doctor can find nothing wrong.

I have been investigating this matter from the standpoint of correspondence. I find that about ten per cent. of my correspondents have verified cases of broad ligament abscess by abdominal section and a much larger percentage have opened abscesses which they considered broad ligament abscesses, but not having opened the belly they have been unable to exclude tubal and ovarian trouble.

DR. GEORGE M. BOYD:— The discussion seems to have wandered far from the subject of extra-peritoneal collections of pus. In the case reported the infection seemed to be by way of the vagina, because throughout the illness of the patient there was no tenderness over the uterus and the one labium was tumefied. More than that, she had been attended by a midwife. I felt that it was an extra-peritoneal accumulation of pus, and as the woman was very ill at the time of operation, it was important to decide whether it was wisest to make a central incision or to attempt to

relieve by an incision above Poupart's ligament. The course that I pursued seemed to be the wisest.

With regard to the amount of pus, Dr. Wilson reminds me that there was more purulent matter evacuated

than is indicated in the report. For several days pus from the abscess drained away. I do not think that that is the history of the drainage of an ovarian abscess.

Adjourned.

REVIEW OF GYNÆCOLOGY.

INTESTINAL OCCLUSION AFTER OPERATION. BY DR. LEGUEN.

The author reported the following case at the *Société Anatomique* of Paris. A woman was operated on for a unilocular ovarian cyst, the laparotomy presenting no difficulties, when shortly after, symptoms of intestinal occlusion appeared. The sutures of the abdomen were removed and the incision enlarged. The large intestine on the right side was found dilated; on the left side it was flattened, and consequently the obstruction should be found in the region of the spleen. Nothing however could be found and the patient died a few hours later. The autopsy revealed some hard bands at the postero-inferior part of the spleen, binding this organ to the transverse meso colon. These bands were very hard, thick and of old date; a very large one was the cause of the flattening of the intestine. It might have been thought that the intestinal coils had been displaced during the laparotomy and had indirectly produced this complication, but no lesion was found in the interior of the intestine at the site of the strangulation. (*Nouvelles Archives d'Obstetrique et de Gynécologie*, Aug., 1894.)

CONGENITAL COLLOID MYXOSARCOMA. BY DR. MASSEN.

The author related the following

case at the Obstetrical Society of St. Petersburg at the meeting of March, 1894: A strong woman with a normal pelvis came to the Maternity for her sixth labor. Vertex presentation, position right occipital posterior. Spontaneous expulsion of the head and upper part of trunk, when in spite of energetic contractions further expulsion ceased. Traction on the shoulders produced no result. Chloroform was given and the feet had to be first extracted in order to deliver the child, which breathed poorly and died shortly. On examination of the infant, tumors were found on both buttocks. The tumors were round and covered by smooth, stretched skin, containing many dilated veins.

The tumor on the right side was as large as two fists, being larger and harder than the left one. The largest circumference of both tumors together measured 40 centimeters, the smallest 33 centimeters. Autopsy showed that the tumors were developed in the muscles, each being covered by a capsule. Microscopically they were found to be myxosarcoma, the left having already undergone slight degeneration. No other anomaly was present in the child. (*Nouvelles Archives d'Obstetrique et de Gynécologie*, Aug., 1894.)

MULTILOCULAR DERMOID OVARIAN CYST. BY DR. DRANITZINE.

At the same meeting Dranitzine showed a dermoid, its cavity being divided into two pockets. One of these was filled with a creamy liquid; the other contained grease, hair, etc. The walls of the cyst were infiltrated with calcarious deposit and were hard and friable. The pedicle was twisted and degenerated and nearly completely detached from the cyst. (*Nouvelles Archives d'Obstetrique et de Gynécologie*, Aug., 1894.)

THE TREATMENT OF COMA IN HYSTERIA.

(1.) Give the following enema:—

R.	Tinct. valerian,	5 grammes.
	Moschli,	1 gramme.
	Vitel. ovi,	No. 1.
	Aqua,	250 grammes.

(2) Digital compression of both areolæ. (3) Perform rythmical tractions of the tongue (after Labord's method?) and apply interrupted electric currents to different parts of the body. (*La Tribune Médicale*, Aug. 30, 1894.)

UTERINE FIBROID ASSOCIATED WITH ANURIA, HYSTERECTOMY, RECOVERY. BY DR. TUFFIER.

The author reported the case at a meeting of the *Société de Chirurgie de Paris*. In a patient from whom he had removed a uterine fibroid two years before there was absolute anuria which had lasted four days. Without any subjective symptoms a tumor the size of a gravid uterus had developed in the last ten months. Dysuria had been present for two weeks, resulting in anuria. Her general condition was extremely poor.

pulse weak, frequent respirations and frequent vomiting. Tympanitis was marked, the intestines not having moved for a number of days. Hysterectomy was performed. In the first twenty-four hours after operation 1050 grammes of urine was voided. The uremic symptoms completely disappeared in three days, and ten months after, the patient reported herself as entirely well. (*Le Mercredi Médicale*, No. 42, 1894.)

THE EFFECTS OF QUININE ON PREGNANCY.

A collective investigation of this subject has been recently undertaken, with the following conclusions: (1) The existency of pregnancy is no bar to the administration of quinine. (2) For fevers and other affections during pregnancy, in which quinine is indicated, the effects of the drug are more marked than those of any other. (3) That abortion following the administration of quinine is either the result of the original malady or the effect of idiosyncrasy. (4) That allowing for an idiosyncrasy, in cases in which a tendency to abortion exists, and in others as a matter of precaution, quinine is best administered combined with a sedative (opium.) (5) Hence the old-standing view of the action of quinine on the duration of pregnancy is not borne out by the clinical experiences collected in the replies. (*Indian Medico-Chirurgical Review; reviewed in the Medical Record*, Sept. 8, 1894.)

THE TREATMENT OF GONORRHOEAL ENDOMETRITIS. BY DR. R. ARCH.

The author recommends as treatment in this affection the intra-uterine application of this formula:—

R.
 Alum. 7 grammes 50 centigrammes.
 Laudani, 100 grammes.
 Glycerini,
 Aq. dest. aa, 25 grammes.

A small quantity of this mixture is injected into the cavity of the uterus, by means of a syringe, similar to that employed by Braun, but of larger calibre. These injections are practised first every three days, later every four days. (*Semaine Médicale; Gazette de Gynécologie*, Aug. 15, 1894.)

FIRST SERIES OF 100 OPERATIONS
 OF URO-GENITAL FISTULA IN THE
 FEMALE. BY DR. O. MORISANI.

The author divides uro-genital fistulæ in the female into five sections, viz: (1) Urethro-vaginal fistulæ; (2) Vesico-vaginal fistulæ; (3) Vesico-uretero-vaginal fistulæ; (4) Vesico-cervico utero-vaginal fistulæ, subdivided into deep and superficial; (5) Uretero-vesico utero vaginal, or uro-genital cloaca. Among the complications of these various fistulæ, the author insists on stricture, even impermeability, of the urethra; on pro-

lapsus of the vesical mucous membrane, stricture of the vagina, produced by bands of adhesions projecting into the vagina in form of rings, rendering small fistulæ inaccessible or invisible, causing retention of urine and later calculus. The edges of the fistulæ sometimes adhere to the bones of the pelvis, to the symphysis pubis, or even to an ischio-pubic ramus. The peri-fistular cellular tissue may be in a state of sclerosis. Vaginal and vulvar ulcerations may be covered by false membranes and condylomata. As to treatment, the author especially insists on the necessity of complete antisepsis of the genital tract. In operating, Sim's position is usually employed and the patient is given as little anæsthetic as possible. The writer employs metallic sutures as much as possible, or metallic and silk sutures combined. Among accidents consecutive to the operation, spasms, vesical tenesmus and hæmorrhage are to be noted. In some patients, in order to obtain complete cure, several operations are necessary. (*Giornale internaz. delle Sc. Mediche; review in Annales de Gynécologie et d'Obstétrique*, Aug., 1894.

BOOK REVIEWS.

TRANSACTIONS OF THE AMERICAN
 GYNÆCOLOGICAL SOCIETY, VOL.
 XIX. Wm. Dornan, Printer,
 Philadelphia, 1894.

THIS work, which contains twenty-six papers, is as usual of the highest order. As several of the memoirs have already been abstracted in the "Annals" the titles and names of the

authors will simply be given. The president's address, by Wm. T. Lusk, was "The Relative Value of the Various Surgical Methods of Treating Uterine Fibroids." Five papers on Extirpation of the Uterus in Diseases of the Adnexa came from the pens of Baldy, Krug, Hanks, Backe Emmet and Wylie. Hysterectomy in Bilat-

eral Pelvic Disease was ably presented by Wm. R. Pryor. Three papers on the Management of Face Presentations by Reynolds, Jewett and Davis form an interesting part of the volume. The Abuse of Trachelorrhaphy, is by Wm. R. Pryor. A most interesting paper on Fatal Nausea and Vomiting of Pregnancy was read by E. P. Davis. One paper especially to be considered and read is Hysterectomy in Septic Pelvic Disease, by Fernand Henrotin. The other memoirs contained in this volume are as follows:—Myomectomy as a Substitute for Hysterectomy by E. C. Dudley; Intra-ligamentous and Retro-peritoneal Tumors of the Uterus and its Adnexa, by Wm. H. Wathen; Rupture of the Uterus is considered as to treatment by C. M. Green and Malcolm McLean; The Best Method of Operating Old Lacerations of the Perineum, by W. G. Wylie; The Ultimate Results of Treatment of Backward Displacements of the Uterus, etc., by F. H. Davenport; Inflammation of the Ureters in the Female, by W. D. Mann; Symphysiotomy versus Induction of Premature Labor, by C. P. Noble; The Influence of Minor Forms of Ovarian and Tubal Disease in the Causation of Sterility, by T. A. Ashly; Vaginal Anus and Treatment, by A. H. Buckmaster; Vaginal Hysterectomy, by E. E. Montgomery; Shortening of the Round Ligaments for Uterine Displacements, by H. P. Newman; Hæmatocele Retro-uterina, by G. T. Harrison.

A MANUAL OF NURSING IN PELVIC SURGERY. BY LEWIS S. MCMURTRY, A. M.; M. D., Professor of Gynæcology in the Hospital College of Medicine, Louisville, etc. John P. Morton & Co., Publishers, 1894.

This neat little work of 92 pages

has been prepared as a practical guide for nurses engaged in the surgical treatment of the diseases peculiar to women. The methods given are those practiced by the author and pains have been taken to make all subjects as clear as possible. The work treats of the general anatomy of the pelvis, the preparation of instruments and of the patient, operations, complications and operations performed in private houses.

The book is clear and concise and very well fills the place intended for it.

A MANUAL OF HUMAN PHYSIOLOGY. BY JOSEPH H. RAYMOND, A.M.; M. D., Professor of Physiology and Hygiene in the Long Island College Hospital and Director of the Physiology in the Hoagland Laboratory. W. B. Saunders, 925 Walnut St., Philadelphia, 1894.

THE author's experience of twenty years as a teacher of physiology has brought him to the conclusion that, in the short time allotted to the study of this science students, can only assimilate its principal facts. The author has kept in mind this fact, and in his book he has endeavored to put into a concrete and available form the results of his experience. As in all books on the subject there is a little space devoted to embryology, which should not find its way into a work on physiology. The nervous system is the best feature of the work, and food and digestion are well treated. The work is good for what it is intended and probably best fitted for the author's students. The illustrations, some of which are colored, are taken from the works of Ranvier, Heitzmann, Kölliker and others. The publishers have, as usual, printed and bound the work in the best of taste.

ANNALS

—OF—

GYNÆCOLOGY AND PÆDIATRY.

DEPARTMENT OF PÆDIATRY.

EDITORIAL.

Dr. Viquerat's Treatment of Tuberculosis Before the Societe Medicale de la Suisse Romande.

OF late, many papers have been talking much about the new treatment of tuberculosis by asses' blood-serum and we desire to relate the result of the meeting of the *Société Médicale de la Suisse Romande* regarding this treatment. The reader desirous of looking up the theory and technique of this new method is requested to consult *The Lancet* for Sept. 29, and Oct. 6, 1894.

The Swiss Society met at Vevey on Oct. 11, and one of the papers figuring on the list was by Dr. Viquerat on his new treatment and this memoir was followed by a most animated discussion. Dr. Viquerat spoke for about an hour, chiefly on immunity, experiments with tetanus and diphtheria, quite forgetting that he was dealing with the profession which was perfectly *au courant* with these questions. The only essential point in which Dr. Viquerat diverges from the opinions of the French bacteriologists is his conception of the virulence of cultures. The

French attribute this virulence to a poison secreted by the organisms which is dissolved in the culture bouillon, while Dr. Viquerat believes that the poison resides in the bodies of the organisms themselves, which only dissolve after their death in the culture bouillon. Consequently it is the cadavers of the bacilli which confer toxicity to the media. The presence of glycerine in the media favors dissolution and this is the explanation of the toxicity of tuberculin, which is a culture of the bacillus of tuberculosis in a glycerine media, the culture being filtered and reduced to 1-10 by heat at 100°C. It is this property which explains the natural immunity in man against various infectious diseases. We eat and absorb each day the most virulent organisms, and while in such small quantity we digest them, and these organisms, dead and digested, produce in us little by little a vaccination against disease. Thus, while children are very susceptible to tuberculosis and diphtheria,

old people are much less so, having little by little digested the specific germ during their existence. According to Wassermann, 10 cubic centimetres of serum taken from an old man can neutralize one cubic centimetre of the toxine of diphtheria. Consequently, in a tuberculous patient, things take place as follows: If the subject has been placed in a position obliging him to absorb more bacilli than he can digest, these bacilli multiply and create their disease. As these organisms die, they are dissolved and send out tuberculin into the entire system; and this tuberculin, by the arterial congestion that it produces around the tubercular foci, favors their diffusion, thus explaining the progression of the affection. Now, the blood of an ass possesses the property of neutralizing tuberculin, thus showing the refractory condition of this animal against tuberculosis. Since Dr. Viquerat's communication of last July, in which he announced that he simply injected pure serum of the ass, he has modified his method and believes that he increases the power of immunity by first injecting cultures of the bacillus of tuberculosis into the veins of the animal. Desirous of more facts than theory, the Society would have liked it better if Dr. Viquerat had brought some of his patients undergoing the treatment as well as a few guinea pigs treated by the method. But the speaker was contented in announcing that he had cured twenty-five cases of tuberculosis and showed two of his cases, one of which was a little girl with lupus of the hand, and

a young man, who, after a long suppuration in the pleura necessitating the resection of three ribs, had a fistula which was cured by one month's treatment with injections of serum. Now, the little girl was not cured, which fact was affirmed in particular by Dr. Dind, Professor of Diseases of the Skin, at the University of Lausanne, and the case of the young man was not reported, so that it is permissible to doubt the tubercular nature of his lesion, as the appearance recalled perfectly a simple cured empyema. In the discussion which followed, Prof. Bourget said that he had had in his hospital service a patient of Dr. Viquerat's, and, in spite of his long stay in the hospital, it was impossible to find in him any sign of active or cured tuberculosis. The patient had a chronic bronchitis and emphysema, diseases considered by the majority of the profession as antagonistic to tuberculosis. Dr. Bournier related the case of a tuberculous guinea pig in the laboratory of Prof. Tavel, who died literally filled with tubercles in spite of an intensive treatment with serum sent by Dr. Viquerat. Prof. Revilliod then spoke. He expressed his doubts as to the immunity of the serum of the ass, because every time that the cultures were injected, this animal reacts, very slightly it is true, but always with the same intensity. Still more, he expressed the fear that in the preparation of the animal by injection of the living bacillus, they might be found in the serum destined for the injection, the animal only rendering what had been given him.

But these theoretical considerations should give way to clinical observation, and it is on this ground that Prof. Revilliod took his position. As Dr. Viquerat had given a bottle of serum to the Medical Clinic of the Faculty of Geneva, it had been injected into three cases. In two of these cases, after seven and eight injections of serum, practised about every day, no increase or decrease in the disease was noted. The third case was that of a young Italian, very strong in appearance, and who had a tubercular lesion in the lungs just at its début. The patient received in nine days, five injections of serum, and during this time his general condition became exceedingly grave. The appetite and strength, which were normal when the man entered the hospital, rapidly disappeared, and fever, which had not been present, was observed. When the patient left the hospital (for he was obliged to return to Italy) his condition was much worse than when he entered. Not wishing to draw any conclusion

from so few cases, Prof. Revilliod made a rendezvous for a near date, in order to conclude, after more experience, the value of the treatment, as the professor desired to have some proofs, or at least some indications, as to the real efficacy of the method, and would also like to have either full details of the cases treated or laboratory experiments, which are now completely wanting. The discussion was then closed for want of facts controlling the question, and by unanimity the following resolution was proposed and adopted by the Society: "On account of the absence of proofs, the Medical Society of the Suisse Romande declares its inability to emit any appreciation on the subject of the treatment of tuberculosis according to Dr. Viquerat's method." Let us hope, however, that this question will continue in the road that it should have followed from the beginning: patient research, serious control and the publication of experimental and clinical work in medical journals.

The Treatment of Whooping Cough, with Special Reference to Antipyrine.

BY CHARLES GREENE CUMSTON, M. D.

Chemical and Physiological Properties. Antipyrine was discovered by Dr. Knorr, of Erlangen. He obtained it by combining acetacetic ether with phenylhydrazine; acetacetic phenylhydrazine-ether was thus formed, and when heated on

a water bath changed to antipyrine. This name was given the product for therapeutical use. Knorr announced it under the scientific name of *démethyloxy-quinizine*, which corresponds to its chemical constitution. A third name, anal-

gesine, has been given it. In fact this product last named, as prepared by Petit, a Paris chemist, is identical in every respect to that of Dr. Knorr. Antipyrine is a white substance composed of crystals in the form of fine needles. When perfectly pure it is without odor; when purification is not complete, it gives out a disagreeable smell of benzine. It has a slightly bitter taste, but this does not last. It is very soluble in water and alcohol; only slightly so in ether. Its melting point is not as yet absolutely fixed. Knorr thinks it to be a 113° C.; other chemists put it at from 110° to 113° C. This difference of opinion is easily explained if it be remembered that antipyrine is exceedingly hydrometric. When it is totally dry, fusion takes place at 110° C., so that with this precaution, this physical character has a certain importance. Its chemical reactions are numerous, but are generally not characteristic. Antipyrine is precipitated by the general reagents of the alkaloids, such as those of Wry and Sonnensgien, Marmé, Meyer, Dragendorff, etc. Among these the iodated iodide of potassium should be mentioned, as it is quite characteristic. It gives a dark red precipitate, which is perceptible at 1-100,000 per cent. This reagent has been advised for the search of the drug in the urine. Picric acid and tannin also precipitate antipyrine. Hypobromide of soda produces a precipitate, which, if heated, is transformed into heavy oily drops, having an empyreumatic odor. The reagents which can be relied upon are perchloride of iron and nitric acid,

the latter producing a green coloration, sensible at 1-100000 per cent. The perchloride of iron produces a blood red color, distinctly visible in a 1-2000 per cent. solution, or even at 1-5000 per cent. This color is produced by a mixture of sulphuric and ozotic acid, but disappears rapidly. Antipyrine is decomposed by oxydizing substances in presence of water; or by the action of heat a series of bodies are formed, among which phenol and acetone predominate. Let me add, before closing, that the research of antipyrine in the urine is easy, because is it preserved on account of its resistance against fermentation.

In the administration of antipyrine in whooping cough, I shall pass in silence over its antithermal action and shall only occupy myself with its action on the nervous system.

Physiological action. Demme of Berne, in 1894, was the first who noticed that by large doses the animals were killed by paralysis of the heart, while smaller doses produced an exaggeration of the reflexes and an irritation of the spinal cord. Cappola remarked an increase of reflex irritability in the frog at a dose of from 20 to 40 mg.; with doses of from 50 to 80 mg. he produced convulsions, which disappeared when the cord was cut across. A large dose paralyzed the nervous centres, the sensitive nerves being only affected for a short time. Henocque and Arduin produced tonic convulsions with paralysis and rigidity of the muscles in a dog by a hypodermic injection of antipyrine at the dose of 6 grammes and a half per kg. of the

weight of the animal. Bouchard showed in a note read at the Biological Society of Paris in 1884 that the action of antipyrine on the convulsions that it produced was through its action on nervous and not on the muscular system. Experiments show that if antipyrine be given to an animal after you cut the sciatic and crural nerves on the same side, a general muscular rigidity takes place, excepting in the limb having its nerves sectioned. In 1885, Prof. G. Sée, in his first note read at the Academy of Medicine, of Paris, relates the following experiments made by Gley: Two grammes injected subcutaneously in a dog weighing 10 kg., the drug produced three symptoms, viz.: First, very marked decrease of sensibility and even a real analgesia of the limb into which the drug was injected and sometimes on the other side as well; second, in an animal under the influence of antipyrine, excitation by electricity of the sciatic nerve only produced a very slight reflex contraction of the opposite side, consequently indicating a weakening in the perceptivity of sensibility and reflex power of the cord; third, if the animal is poisoned, excepting one limb, which has had its artery tied, the muscles under the influence of antipyrine are seen to contract slowly and with difficulty, while the muscles of the limb into which the drug had not entered, preserved their contractility, thus proving that antipyrine acts directly on the muscular nerves. Carasias, in his thesis written under the direction of Prof. Sée, came to the same conclusions.

After injections he found the sensibility lessened in the limb injected. If the dose was rather strong, analgesia extended into both, limbs but still predominated in the member which had received the injection. Antipyrine may consequently be considered a nerve medicine *par excellence*. It is an excellent sedative of the bulbo-medullary system, capable of diminishing the neuro-reflex muscular contractions and of weakening the excito-motor action, whose expressions are so varied in pædiatric pathology. It is a depressant and inhibitory drug of the highest order, and this is why I believe it indicated in certain nervous diseases of childhood, and among them pertussis.

Having given this short introduction on the chemistry and physiology of this important remedy, in order to demonstrate with some reason, based on experimental therapeutics, its use in pertussis, I shall proceed to give a description of the treatment of this disease by remedies other than antipyrine, and then antipyrine alone or in combination, that have appeared to me to be of some value.

Pertussis is a complicated affection, inflammatory, spasmodic and congestive in character, the pathology of which has not as yet been completely elucidated. According to some writers, especially von Herff, whooping cough is considered as a local catarrh of certain portions of the mucous membrane covering the arytenoid cartilages and the cartilages of Wrisberg and Santorini. Michaël, Hack and Sch-

wadewald place it among the reflex neuroses of nasal origin, but the greater number of writers give it a parasitical origin, and in this theory I am inclined to believe. According to the writings and researches of Letzerich in 1870, of Tschamer in 1876, and the more recent ones of Dr. Afanassjew of St. Petersburg, the disease is produced by a fungus, which covers the mucous membrane of the respiratory passages. Afanassjew has named it *Bacillus tussis convulsivæ*. This writer endeavored to put himself out of range of the criticism which was made of his predecessors. His aim was to realize an asepsis of the mouth and throat of his patients by means of irrigations with a solution of permanganate of potassium and by a thorough cleaning of the teeth. After having described the bacillus that he had discovered, he inoculated them in animals, killing them with all the symptoms of pertussis and bronchopneumonia, from which results he concluded that the disease was of a parasitical nature and consequently contagious. Sremtschenkow after thorough experimentation with the bacillus of Afanassjew came to the conclusion that it was specific, it was to be found in the sputum about the fourth day of the disease; it multiplies in the tissues of the human organism and as it increases the disease becomes more severe with complications, as for example catarrhal pneumonia, a great increase in their number is found in the sputum; and lastly, the bacillus disappears a little before the end of the affection. As to the treatment of this malady, it may be said that there

are few diseases for which a greater number of remedies have been devised, and I will now pass in review the principal ones. In the first period of the disease the treatment is the same as for ordinary bronchitis and it may be continued in the second period. If there be abundant expectoration a vomative should be prescribed as has been advised by Guersant, the syrup and powder of ipecacuanha should be chosen in preference to all others. Cullen preferred emetic; he gave the antimoniated tartrate of potassium after the manner indicated by Fothergill. The following is also good:

R. Vini antimonii
Syr. scillæ aa 10 grammes.
Aluminil, 5 grammes.

M. D. S.—A teaspoonful every two or three hours. These means are often efficacious in lessening the attack. Antispasmodics, such as musk, assa-fœtida, oxide of zinc and above all the bromide of potassium and ammonium serve to calm the cough and diminish the number of attacks. Belladonna, datura, ergot, cochenil, chloroform, chloral, infusion of coffee have all been extolled for the same end. An excellent formula for belladonna as prescribed in Vienna is the following:—

R. Pulv. balladon. rad. 10 centigrammes.
Sodæ bicarb. 40 centigrammes.
Pulv. sacchar. alb. 2 grammes.
M. div. in dos. aq. No. X.

D. S.—Take one powder every three hours. Liebemiester's treatment is as follows. In the catarrhal period the patient should remain in bed and take a teaspoonful of this mixture every two or three hours.

R. Stibii sulph. aurant. O.	50 grammes.
Mucilag. gum arab,	20 grammes.
Aq. dest.	50 grammes.

When the cough is severe he prescribes,

R. Ext. belladon.	50 centigrammes.
Aq. dest.	100 grammes.
Syr. ipecac.	25 grammes.
Vini antimon.	10 grammes.

M. D. S.—A teaspoonful twice to six times daily. To stop a paroxysm of coughing in the beginning he orders:—

R. Ether,	4 grammes.
Ol. terpinin.	1 gramme.

M. D. S.—10 to 20 drops to be inhaled on a handkerchief. I will only mention, *en passant*, opium and its different preparations. It was much praised by Stall, Henke and Dewees, but it was not very long before the inconveniences in its use were discovered and to-day it is no longer employed. The treatment of pertussis by gas was recommended years ago and was brought back before the profession in 1864 by Bertholle and Commenge. It is far from procuring all the advantages that its upholders claimed for it. However, in 1892, Hallett reported four cases of the disease treated with good results by inhalations of ozone. Leurat Perraton, a former physician to the Antiquaille of Lyons, recommended the use of liquid ammonia as a specific, given at the dose of six drops in a potion of 150 grammes, to be taken by spoonfuls every hour. During the last few years a good number of physicians have tried the effect of antiseptics, basing their use on the prob-

able microbic nature of the affection. Some prescribed them internally, while others tried to act more directly on the respiratory passages by means of inhalations. Among the antiseptics the most employed internally and arranged in order of their value may be mentioned the salts of quinine, salicylate of soda, and lastly, carbolic acid, at the dose of 0.025 grammes. Carbolic acid may be formulated for internal use as follows:—

R. Acid carbol.	0.20 centigrammes.
Spir. vini. sect.	10 grammes.
Aq. menth. pip.	40 grammes.
Aq. laurocerasi.	20 grammes.
Syr. sacchar.	30 grammes.

M. D. S.—A teaspoonful every two hours for a child over two years old. Other physicians prefer to act directly on the mucous membrane of the air passages by inhalations of medicated vapours, instead of prescribing the drug internally. The salts of quinine have been employed by this means, but the most employed are carbolic acid, thymol, resorcin, salicylate of soda or essence of turpentine. Inhalations incontestably diminish the number and intensity of the attacks. Michaël tried different powders in order to test their efficiency. He experimented with hydrochlorate of quinine, benzoic acid, bromide of potassium, benzoin, tannin, boracic acid, iodoform, cocaine and pumice in powder. These different powders had for effect to diminish in number but not to suppress the attacks. Of various other drugs extolled in the last few years I will say but little and will only quickly mention a few. Benzol has been recommended by

Robertson at the dose of 12 mg. in a solution for children of six months, and 3 cg. in capsules or solution for adults; the success is attained when the air respired has the odor of the drug. In Germany and Austria, benzol was much given in this disease, and the writer would suggest the following formula, due to Macalister, as being the least irritating:

R. Benzol, 1 gramme.
Alcohol, q. s. ad. sol. perfect.
Tinct. chloroform, comp. (B. P.) gttss. XV.
Syr. cort. aurant, 30 grammes.
Aq. dest., 120 grammes.

M. D. S.—A teaspoonful every three hours. Porteous mentions three cases of the disease in which he prescribed onabaine, an alcaloid found in the roots of onabaio. The dose is .001 of a gramme every three hours for a child under five years. The author claims that the drug is beneficial in all stages of the disease. Bromoform has been loudly praised by Krieger, Nauwelaers, Earl, and many others. Schippers gives the following doses as appropriate:—

From 6 mos. to 1 yr. 10 ct.-gramme 3 times dy.

" 1 to 2	ys.	20	"	"
" 2 to 3	"	25	"	"
" 3 to 4	"	30	"	"
" 4 to 7	"	40 to 45	"	"

Bromoform should be kept in a dark place, and I think that it is best administered in a potion, the quantity for *one day only* being prescribed and the bottle refilled for each day. I have treated a few cases with certain benefit and have followed the doses given by Schippers without having met with any accidents. I prescribe it as follows:—

R. Bromoform, q. s. for age of patient.
Alcohol, q. t. ut f. sol. perfect.
Syr. sacchar.
Aq. dest. aa 30.0.

M. D. S.—To be taken by spoonfuls in 24 hours.

But of all the treatments devised for pertussis that are actually employed, antipyrine appears to be certainly the most in favor. Quite a number of papers have appeared on this subject, and I will take the liberty to rapidly recapitulate a few of the most important ones. Dubousquet-Laborderie was the first to try antipyrine in whooping cough, and in his paper which appeared in *le Bulletin général de Thérapeutique* of March 15, 1888, he declared that he never met with a drug that gave him such good results in this affection, and in fact in eleven cases he produced a complete cure at the end of from 12 to 15 days. In only two cases in which the attacks of coughing amounted to from 40 to 60 times in 24 hours, did antipyrine appear to be useless. He gave it in doses of 30 centigrammes to one gramme for children under 2 years and from 1 to 4 grammes for older children. In every case the drug was well tolerated and never produced serious nervous symptoms or trouble in the heart or kidneys. His conclusions are as follows: 1. With rare exceptions children support the drug well; it is not dangerous and is easy to administer and control. 2. The spasm is quickly calmed and the period of decline is announced in a few days. 3. By the rapidity of its action and its

harmlessness, antipyrine seems to be a precious drug for arresting a disease, too often accompanied by complications. 4. The impurity of the antipyrine plays an important part in the production of gastro-intestinal troubles; consequently the source of manufacture should be looked after.

At the time this paper appeared, Genser, of Vienna, read at the medical society of that city a statistical report of 200 cases of pertussis, 76 of which were treated by insufflations of powders in the nasal cavity, after the method of Michaëls, and 124 by antipyrine taken internally. The result was only fair in the 76 cases treated by insufflation, the mean duration of the disease was more than 42 days, and this fact is in accord with the greater number of those who have employed this treatment. The author concluded that insufflations only checked vomiting. Antipyrine on the contrary gave very superior results, the mean duration of the disease not being over 24 days and the length and intensity of the coughing rapidly subsided, the dose employed being one gramme in twenty-four hours, for children under five years of age. Some time later Sonnenberg gave the result of his personal experience of over 80 cases. The method employed by this physician consisted in giving thrice daily, preferably when the patient was quiet, as many centigrammes (each dose) as the child was months old and as many decigrammes as the patient was years old, continuing this treatment for eight days after cessation of the

attacks. Sonnenberg, more enthusiastic than his predecessors, declared that he had found the specific of pertussis. At the Italian Society of Medicine, held at Vienna, in Oct. 1888, Prof. Guatia said that he had cured six cases of pertussis in the first stage out of ten which had been under his care; the remaining four cases were only cured when in the second stage of the disease. He prescribed nasal insufflations at the same time and antipyrine was given internally. Leubuscher treated the disease which attacked Jena severely during 1888 by Sonnenberg's method, but did not obtain such brilliant results as the latter. Having announced that Sonnenberg had exaggerated the therapeutic value of antipyrine in pertussis, Leubuscher came to the following conclusions: (1) Antipyrine, when employed in the commencement of the disease, exercises a favorable action on the duration and intensity of the affection. (2) In a great number of cases, the number of attacks remains limited to six or seven in 24 hours, and the length of the disease does not go beyond three or four weeks. (3) In no case is the disease cut short by the use of this drug. When the affection is not at an advanced stage, antipyrine does not give more favorable results than any other drug. Leubuscher did not observe any serious accidents and the only one that was observed was a generalized exanthema in a boy aged seven.

At a meeting of the *Société de Thérapeutique*, Feb. 27, 1889, Dr. Dubousquet-Laborderie brought up the question and completed the results

described in his paper of the previous year. The number of cases treated by him up to the above date numbered 94, of varying intensity, and include both children and adults. The speaker this time was still more convinced and affirmative and gave to antipyrine a positive action on the fundamental elements of the disease, namely: specificity, catarrh, neurosis. He had seen the catarrh rapidly diminish in several cases under the influence of the drug. As to the antiseptic and depressive action that antipyrine exercises on the nervous centres by diminishing the excitomotor power of the cord, they had been established by the experiments made by Brouardel and Loge.

These are the proofs that the author gives. Out of the 94 cases, 71 times the effect was most marked; 23 times only the effect was only fair or did not exist. Dr. Dubousquet adds that several times he was obliged to give up the drug on account of the gastro-intestinal troubles produced by it in some children. He says, however, that generally speaking, children appear to support antipyrine better than adults, probably on account of their greater respiratory activity and the greater integrity of the lungs. In one child aged 3, who was cured, however, he observed a commencement of cyanosis with alarming nervous troubles. He recommends, in spite of this, to begin with as large doses as possible, watching attentively the effects of the drug, and to bear in mind that strong and apyretic children support antipyrine better than weak and feverish ones. Muttler and Hare consider

antipyrine as the best remedy in this disease. The latter prescribes 2 grains, (0.12 centigrammes) every three hours until effect has been accomplished, and then for every four or five hours. Hare also states that the drug should be carefully watched and should be stopped as soon as there is sub-ungual cyanosis. I prescribe antipyrine as follows:

R
Antipyrini pur. 1.0 gramme.
Syr. cort. aurant. 30.0 grammes.
Aq. dest. 70.0 grammes.

M. D. S. A teaspoonful of this potion contains 5 centigrammes of antipyrine. Dose: a teaspoonful to a tablespoonful every three hours, according to the age of the child.

When there are catarrhal symptoms, add terpin. hydrat. as follows;

R.
Antipyrini pur. 1.0 gramme.
Terpin. hydrat. 1.50 gramme.
Syr. cort. aurant.
Aq. dest. aa. 60.0 grammes.

M. D. S. A teaspoonful contains 4 centigrammes of antipyrine and 6 centigrammes of terpine. Dose: a teaspoonful to a tablespoonful every three hours, according to the age of child.

When the paroxysms are severe, I combine antipyrine with the bromide of potassium:

R.
Antipyrini pur. 2.50 grammes.
Potass. bromid. 8.0 grammes.
Syr. sacchar.
Aq. dest. aa. 60.0 grammes.

M. D. S. A teaspoonful contains 10 centigrammes of antipyrine and 30

centigrammes of bromide. Of this I give a teaspoonful every three hours until affect.

The following table of doses of antipyrine, due to Prof. D'Espine, is excellent, and one that should be remembered when prescribing this drug.

From 1 to 6 mos. 5 to 10 ct.-gramme per dose.

" 6 mos. to 1 yr.	10 to 20	"	"	"
" 1 yr. to 4 ys	20 to 30	"	"	"
" 4 ys. to 6 "	30 to 50	"	"	"
" 7 " and upwards	1 to 3 grammes	pro	die	

Never go above 3 grammes daily in children.

In closing, I would say that I do not believe that antipyrine is a specific

for pertussis, as many writers think. but I can say that the above formulæ have been of great service to me in the conditions indicated. The patients that I have treated with antipyrine have on the whole perhaps done better than when treated by other remedies, in lessening the number and severity of the paroxysms; but I do not recollect any case that was shortened in its duration by antipyrine. Theoretically it is indicated and has proven itself useful in practice, and I shall continue to prescribe it in this affection until something better has been found.

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REVIEW OF PÆDIATRY.

AFFECTIONS OF THE TESTICLES AND HEREDITARY SYPHILIS.

Taylor (*New York Med. Jour.*, Nov. 18, 1893) reports six interesting cases of hereditary syphilitic involvements of the testicles and their appendages. The disease manifests itself most generally as an orchitis, with sometimes an accompanying epididymitis. When this occurs it is generally accompanied by an inflammation of the vas deferens. This form of syphilitic manifestation is not of frequent occurrence, as shown by the presence of only about fifty cases reported or mentioned in literature. It is generally found in children three to six and twelve months old, and in diminishing frequency in the second and third years, while there are exceptional cases, even as late as the twenty-fourth year.

The orchitis begins slowly and insidiously without pain or subjective symptoms and is only noticed when its size attracts attention. It is then usually the size of a pidgeon's egg, or a small marble or walnut. As a rule it is small and there is no tendency towards the development of a large tumor. There is generally no tenderness. Sometimes the ordinary smoothness is not found, and the surface of the tunica albuginea is uneven and irregular. The epididymis may be slightly or considerably enlarged and also the vas deferens. These affections, uninfluenced by treatment, usually run an uneventful course and end in resolution or in atrophy, particularly of the gland substance. The concomitants of these testicular affections vary according to the age of the child and the intensity of the in-

fection. In very early months, roseola, popular syphilides, mucous patches, eye, ear, and bone lesions may be also present. In later months these accompanying lesions will be fewer. The diagnosis in most cases may be easily made, but in others it will not be as clear. The differential diagnosis is most difficult between syphilis and tuberculosis, while it should be remembered that there may be a mixed infection or even malignant disease.

This author would advise the use of mixed treatment, which he has found most efficient in these cases, as also in bone and joint lesions of hereditary syphilis. This treatment, with intermissions, should be kept up at least two or three years. Locally, much good can be derived from mercurial frictions to the scrotum, using, with great care as to the avoidance of dermatitis, white precipitate or blue ointment. When the organ is much affected with degenerative processes, ablation may be necessary.

ERYSIPELAS and GONORRHOEA IN A CHILD.

An interesting case is reported by SCHMIDT (*Central für. Gynækol.*, No. 39, '93), in which a child three years old was apparently cured of gonorrhœal vulvitis and urethritis by an attack of erysipelas, beginning on the left buttock and thigh and extending over the entire lower limbs. The second day after the appearance of the erysipelatous patch, the gonorrhœal inflammation had entirely disappeared and the patient at the end of one week made a good recovery from the erysipelas, with no recurrence of the gonorrhœa. It would thus seem that the poison or bacteriological cause of these two diseases are antagonistic, and that it is impossible for

them to co-exist in the same individual.

A CASE OF CONGENITAL HYDROCELE OF THE NECK : CURED BY DRAINAGE AND COMPRESSION.

DICKINSON (*Brit. Med. Jour.*, May 12, '94), reports an interesting case of congenital hydrocele in a child three years old. The appearance of the cyst was white, translucent, and pearly; it was soft and fluctuated during crying and coughing, becoming alternately hard and soft. It extended from the sternal end of the left clavicle in front to the middle line behind and quite filled up the sulcus between the shoulders and neck, overhanging the clavicle in front. Through and thorough drainage was established by a rubber tube, but had to be abandoned and was replaced by five or six strands of fishing-gut. The wound was dressed by a compressing antiseptic dressing, this was changed every other day; the seton was removed thirteen days after operation and the wound healed completely five weeks after operation.

THE STARTING POINT OF TUBERCULOUS DISEASE IN CHILDREN.

In an interesting article (*Lancet*, May 12, 1894) J. Walter Carr calls attention to the striking contrast between tuberculosis in adults and children. The three points of most marked contrast are the tendency in adults to pulmonary tuberculosis; the localization in the lungs, rather than the marked generalization in children; and the subordinate part taken by the lymphatic glands in tuberculosis in the adult. The conclusions he would draw from his investigation of the literature and reported cases are: (1) That tuberculous disease in children commences usually in the glands, the liability being at its maximum

during infancy and early childhood. The caseous glands, especially internal ones, may (a) remain quiescent for an indefinite period; (b) start tuberculous mischief in adjacent parts, especially the lungs, by direct extension; and (c) set up general miliary tuberculosis. (2) That the internal glands, at any rate, are probably most often infected directly from the organ with which they are connected, although the possibility of infection through the blood-stream must not be forgotten. (3) That tuberculous disease starts much more frequently in the thorax than in the abdomen, and certainly far more often in the thoracic than in the mesenteric glands. (4) That glandular disease may often exist alone and unsuspected; in very many cases, doubtless, it is quite impossible of diagnosis; still, in dealing with obscure febrile conditions in children it is well to realize the very definite possibility of the symptoms being due to caseation in glands, and to use appropriate medicinal treatment as well as climate. (5) But, after all, by far the most important treatment is prophylactic. This should be done by increasing the resistant power of the system and preventing the entrance of tubercular bacilli. We have, therefore, to try and prevent gastro-intestinal and respiratory catarrhs, and especially to avoid their becoming chronic; to deal promptly with, and, if possible, prevent rickets, the great cause of such catarrhs in early childhood, and to take especial care of children during convalescence from measles, whooping-cough and other acute specific diseases that depress the vitality of the system.

TREATMENT OF HEMOPTYSIS IN CHILDREN. BY DR. CEDET DE GASSICOURT.

Absolute rest in sitting posture, the patient not being allowed to speak or

cough. Dry cups or mustard applied to the chest. Cold applications to the hands. Iced milk. A tablespoonful of one of the following formulæ is ordered:

R. Pulv. alum.	5 centigrammes.
z. Aq. Rabel.	(Codex), 15 gtt.
Ext. ratanhia.	2 grammes.
Syr. simpl.	
Syr. cachou.	aa 30 grammes.
Infus. rosar.	160 grammes.

M. D. S. A tablespoonful every half hour.

R. Ferri perch loid.	40 centigrammes to 1 gramme.
Syr. simpl.	30 grammes.
Aq. dest.	100 grammes.

M. D. S. A tablespoonful every half hour.

R. Ergotin.	1 gramme.
Ext. ratanhia.	1 gramme.
Syr. sacchar.	10 grammes.
Aq. dest.	100 grammes.

M. D. S. A tablespoonful every hour.

In severe cases the author prescribes:

R. Pulv. ipecac.	3 grammes.
Syr. ipecac.	30 grammes.

M. D. S. A tablespoonful every five minutes until vomiting occurs. (*La Presse Médicale*, Sept. 1, 1894.)

x. Note. The Eau de Rabel of the French Codex is composed as follows: acid. sulphuric at 66°, 100 grammes, alcohol at 85 per cent. 300 grammes. Mix by adding the alcohol little by little, allow the liquids to settle and then decant. C. G. C.

TWO CASES OF HEREDITARY SYPHILIS OF THE MIDDLE EAR. BY DR. CHAMBELLAN.

The author reported two cases of congenital syphilis of the ear. The disease showed itself in the form of a sclerous otitis of the middle ear, a lesion which up to the present time has not been written upon. The lesion in question does not get well spontaneously, but on the contrary is curable by specific treatment. (*Congrès de l'association française pour l'avancement des Sciences; in la Progrès Médical*, Aug. 18, 1894.)

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Suppression of Urine after Abdominal Section.

BY EUGENE BOISE, M. D.,

GRAND RAPIDS, MICH.

TOTAL or partial suppression of urine after abdominal operations is by no means of rare occurrence, and the frequency with which it is followed by fatal results is well known.

Notwithstanding the assertion in a recent number of the *Times and Register*, that suppression of urine is *per se* rarely, if ever, a post-operative cause of death, the impression remains in the minds of many operators that the fatal result is largely, if not entirely, dependent upon that condition. This condition too often exists, and in patients apparently in good condition before operation, and too often fatal results ensue. It is therefore imperative that, if possible, it should be relieved.

That we may combat it successfully it is necessary, first, to understand the physiology of the secretion of urine; second, to ascertain the causes that may give rise to its partial or total suppression; and, third, to reason from the conditions existing after or arising from the operation

to the conditions directly causative of the kidney disturbance.

It will be necessary only to briefly recall to your minds the salient points in the accepted physiology of urinary secretion, not to discuss the theories. Concisely speaking, the amount of urine secreted depends on the relation of the blood pressure within the capillaries or the glomeruli and the pressure within the convoluted tubules and efferent vessels. Other things being equal, increased blood pressure in the renal artery results in increased secretion of urine, and conversely lowered blood pressure decreases the amount of urine. In other words, the amount of urine secreted rises or falls according to the degree of fulness of the renal artery and the velocity of the current through the capillaries.

The process is not merely one of pure filtration, as experiments have proved that the epithelial cells of the glomeruli have an influence on the secretion of the watery constituents

of the urine, and, in health, prevent the filtration of the serum-albumen of the blood. When their vitality is partially or totally destroyed (as it may be by severe contraction of the renal artery, or acute renal anæmia) serum-albumen appears in the urine.

The solids of the urine are separated from the blood by the epithelium of the uriniferous tubules.

Inasmuch as dilatation of the renal artery causes increased secretion of urine, and contraction of this vessel diminishes the secretion, it follows that severe or continued contraction of the renal vessels will necessarily cause such diminution in the amount of urine secreted as to amount to serious suppression. Overbeck has demonstrated that ligation of the renal artery for one and a half minutes caused suppression of the urine in the corresponding kidney lasting three-fourths of an hour.

Ligation of the renal artery, or severe contraction of the smaller vessels of the kidney, so disturbs the vitality of the epithelium of the glomeruli as to allow of the transudation of the serum-albumen, causing true albuminuria. Long continued, severe contraction of the arterioles, causes death of this epithelium, transudation of blood corpuscles and albumen, and ultimately nephritis.

Any factor, therefore, that causes severe contraction of the renal vessels may cause suppression of urine.

Stimulation, either direct or reflex, of the vaso-motor nerves of a part causes contraction of the arterioles of that part.

Stimulation (or irritation) of the splanchnic nerve (which contains vaso-motor nerves for the renal artery) causes contraction of that artery and lessened secretion of urine. Severe irritation of this nerve may cause total suppression of urine.

Causes acting on the general vaso-motor system as irritants cause general arterial contraction and lessened secretion of urine, as has been shown in the history of certain spasmodic or convulsive attacks, such as epilepsy, lead colic, etc. In these there is primarily pallor, contraction of arteries and temporary suppression of urine, quickly followed by relaxation.

But there is another factor that should be mentioned as having marked influence on the secretion of urine, and that is obstruction, in any form, to the free flow through the renal veins, which causes decreased velocity of the blood through the glomeruli, and thus decreased secretion. In general contraction of the arterioles, the veins are overloaded, and the current of blood through the kidneys proportionately retarded.

Again, irritants that are excreted by the kidneys in some cases cause suppression of urine by causing an acute nephritis. Such are corrosive sublimate, carbolic acid, cantharides, the poison of scarlatina, and, some say, ether. These cause nephritis by first destroying the life of the epithelial cells, and, secondarily, a dilatation of the capillaries, with effusion of leucocytes, etc., within the capsules of the glomeruli, by which the capillaries are compressed, resulting in a virtual anæmia, with consequent scanty secretion of the watery elements of the blood, and

often total suppression. If this condition be of short duration, temporary suppression, with transient albuminuria, is the only result; but, if it be long continued, organic changes take place and an actual nephritis is induced. When this condition becomes confined to a few glomeruli, compensatory increased secretion occurs in others, and the urine regains its normal color and consistence, but remains more or less impregnated with albumen.

Ether has been classed with other irritants, such as cantharides, etc., in its supposed action on the kidneys, but whether it so acts or not has never been sufficiently proven.

The difficulty in forming any positive opinion which might be regarded as conclusive lies in the fact that when ether is used for operative purposes, other factors enter largely into the case, which render conclusions as to the influence of the ether in the causation of any consequent urinary disturbances fallacious.

Whether the ether is as injurious as we have generally considered it seems to me doubtful. In order to get an expression of opinion, from which I might deduce definite conclusions, I addressed a letter of inquiry to several of the most prominent general surgeons in the country, bearing on the frequency with which, in their own experience, the use of ether had been followed by injurious effects on the kidney, and the nature of the operations most liable to be followed by such disturbances. The answers I received were so variable and even contradictory that the only conclusions I could form were that different

operators drew different conclusions from similar observations and experiences. In my own experience I have but once had serious kidney trouble following operation. But at my request, Dr. J. B. Whinery, house surgeon at St. Mark's Hospital, has kept an accurate record of urinary analysis in all my recent operations. He had made a careful examination of the urine previous to operation, and of the urine drawn immediately afterward, care being taken to draw directly into a bottle, which was securely corked at once. In all cases there was a strong odor of ether, and in nearly all cases there was a transient trace of albumen, often very slight.

The color was somewhat darker than usual, and the amount greatly lessened during the first twenty-four or forty-eight hours, gradually thereafter returning to the normal. In no case could I perceive any influence on the secretion of urine which I could positively say was due to the action of ether.

About six months ago I operated on Mrs. L. for chronic endometritis with retroversion of a large uterus. It seemed to be freely movable. I curetted thoroughly, and drew the uterus forward by shortening the round ligaments. I then found that the right ovary (which I had thought movable) was adherent in Douglas' cul-de-sac, and by drawing the fundus of the uterus forward the ovarian ligament and nerves were made very tense.

After the operation (at which no unusual amount of ether was used) there was almost complete suppression of urine for a few hours. About six

ounces of dark urine were secreted in the twenty-four hours following the operation. When analyzed the next day it was found highly albuminous and continued so several days. Under vigorous treatment the amount was gradually increased to normal, the color became normal, and the amount of albumen was reduced to a trace, but the kidney has never regained an absolutely normal condition. I believe that the kidney disturbance was entirely due to the severe irritation of the renal plexus, reflected from the irritated ovarian nerves, which may be said to be branches of the renal plexus of nerves.

Many observers have recently expressed the conviction that ether does not cause post-operative nephritis.

Dr. Korte, at a meeting of the *Berliner Medicinische Gesellschaft*, held January 31, 1894, read a paper on the relative effects of chloroform and ether, and stated that he had made special investigation in more than two hundred cases of ether narcosis to determine the effects on the kidney, and found that two hundred and three cases had no albuminuria either before or after narcosis.

In seven there was albuminuria before etherization, but the preëxisting nephritis was in no way modified. In six cases previously free from it albumen was observed in the urine after anæsthesia. He therefore concluded that ether had no injurious effect on the secretion of urine.

Garre (*Deutsche Med. Wochenschrift*, 1893, No. 40) denies that the use of ether causes nephritis, and says that the only contraindication is pulmonary disease.

Other experimenters are arriving at the same conclusions.

We know that ether is absorbed unchanged, and that it is excreted, partly by the kidneys, unchanged. We have inferred that, because it is an irritant to the bronchial mucous membrane, it is also an irritant to the kidneys, but such inference does not seem to be warranted. In the north of Ireland it is customary to drink ether as an intoxicant instead of alcohol, but nephritis does not seem to be more prevalent there than elsewhere. Dr. H. M. Joy, of this city, instituted investigations bearing on that point, at my request, and he tells me that though in certain counties the use of ether as an intoxicant is alarmingly prevalent, and insanity seems to be a comparatively frequent result, he has not been able to learn that nephritis is more prevalent there than elsewhere.

We must therefore hold, in the face of all this testimony, that the injurious effect of ether on the kidneys is at least not proven.

Why then do we have suppression of urine, either partial or total, after abdominal sections?

We have seen that the amount and character of the urine secreted depends on the amount of blood in the renal arterioles and its velocity. Also that all influences that lessen the amount of blood in the renal capillaries, or that retard its velocity, cause decreased secretion of urine. What then are the conditions arising, during or after an abdominal section, that can influence these two factors? And how do they act?

We know that irritation of the

vaso-motor nerves of the renal artery will cause contraction of that artery and lessened amount of blood in the kidney, with consequent lessened amount of urine. Ligature of the renal artery, even for a short time, will cause suppression of urine for a considerable time. Severe contraction of the renal artery will cause greatly decreased secretion of urine, or even temporary suppression.

Severe irritation of the renal plexus will cause strong contraction of the artery, and, if long-continued, may cause destruction of the epithelium of the glomeruli, extravasation of blood corpuscles and leucocytes, suppression of urine, and even acute nephritis. This irritation may be direct to the renal nerves, or reflex from some other sympathetic plexus.

In every abdominal operation the simple exposure of the peritoneum to the air causes irritation to a certain degree of the sympathetic nerves of the abdominal cavity. If, in addition to this, the fibres of the ovarian plexus, or the broad ligament, are constricted by ligature, there is more marked reflex irritation of the other sympathetic plexuses of the cavity. This may not be so severe as to disturb the vaso-motor center, or to perceptibly effect the general circulation, but that it is severe enough to cause marked contraction of all abdominal arteries which have well-marked muscular coats, I am convinced.

In the condition known as surgical shock, suppression of urine (partial or total) is a constant feature.

Dr. R. H. Spencer, of Grand

Rapids, related to me the particulars of a case of railroad injury so sudden and severe as to cause profound shock, but with no perceptible injury to abdomen or kidneys. In the repair and dressing of the injuries no anæsthetic was used, and yet absolute suppression of urine occurred at once and continued thirty-six hours, as demonstrated by the use of the catheter, after which time the secretion was gradually re-established.

In all abdominal operations there is an element of shock; generally so slight as to be unnoticeable, but often so severe as to cause profound circulatory depression. In all cases of shock there is contraction of the arterioles, with lowered blood pressure.*

Contrary to the opinion held by many, the abdominal arteries and arterioles are in a state of spasm or contraction equally with those of the other parts of the body. The general venous system is engorged. The renal artery is contracted, the rapidity of the current through the glomeruli is retarded, and, necessarily, the amount of urine secreted is greatly lessened. A natural physiological result of severe surgical shock is total (if temporary) suppression of urine. The vitality of the epithelial cells of the glomeruli and tubules may be destroyed, allowing the transudation of albumen, and sometimes resulting in plastic exudation, nephritis, consequent continued suppression and death.

But in the lessening of the blood pressure in the renal arteries other factors than the influence of the vaso-

*See "The Nature of Shock" (Boise), in *N. Y. Gynecolog. Jour.* for October, 1893.

EUGENE BOISE.

motor nerves play an important part. The free catharsis before operation, and the free outpouring of serum into the peritoneal cavity after operation, tend markedly to remove the watery elements from blood and to cause general lowered blood pressure. In addition to this, the practice of withholding liquids for twenty-four or thirty-six hours after section prevents the replenishing of the depleted blood vessels, and may be the very factor that converts a temporary functional suppression of urine into an acute nephritis and death.

We have then, as factors in the causation of suppression of urine after abdominal operations: First, the direct irritation of the abdominal vessels by the mere opening of the abdominal cavity, aggravated to a greater or less extent by the more or less severe reflex irritation of the renal plexus by injury to other parts of the abdominal sympathetic. In this case we may have contraction of the renal arteries (with other abdominal arteries) without appreciable contraction of the general arterial system. Or we may have, second, that condition known as shock in which the contraction of the renal and other abdominal arteries exist conjointly with general arterial contraction, and consequent venous engorgement. In such case there is not only lowered blood pressure in the renal arteries, but retarded velocity through the renal capillaries because of venous obstruction. We have also, third, the direct depletion of the blood and consequent lowering of the blood pressure by the removal and withholding of fluids.

In addition to these we have, forth,

the problematical irritant effect of the anæsthetic.

Therefore, given these four factors as causative elements in the occurrence of suppression of urine after abdominal operations, the indications for treatment would seem to be plain. First, to avoid the possible irritant action of ether by refraining from saturating the patient beyond the point of necessary anæsthesia. Too little attention is paid to this point.

Second, to replenish the blood vessels by the free administration of hot water. This cannot, of course, be given by the mouth in quantities sufficient to do any appreciable good, and therefore other channels must be utilized.

Of these, I prefer the rectum, for two reasons: First, the water is rapidly absorbed, easily retained, and comparatively painless; and, second, it brings the soothing effect of heat almost directly to the renal and solar plexuses, thus greatly aiding in allaying irritation and relaxing arterial spasm. To fulfil this indication, it is necessary that the water should be hot rather than merely warm. For this reason also the rectal is to be preferred to the subcutaneous use of water.

I regard this use of hot water as of very great benefit in the treatment of threatened or existing suppression, and now almost invariably direct its use immediately after every abdominal section, unless there is some special contra-indication.

The treatment of the arterial contraction, by which the amount of blood carried to the kidneys is lessened, should be treated by arterial

relaxants (if I may so term them), chief among which are codeine and nitro-glycerine (aided, perhaps, later by pilocarpine).

I say codeine rather than morphine because of its comparative freedom from nauseating and constipating effects.

Morphine (and I think codeine) are classed among those remedies that decrease the secretion of urine; but that effect only occurs in normal physiological conditions of the circulatory apparatus, and occurs by reason of the very quality that renders them valuable for increasing the amount of urine after abdominal section. They act as sedatives to the sympathetic system (in health)

and dilate the entire arterial system, thus markedly lowering the blood pressure in the renal arteries and retarding the current. When these arteries are in a state of unnatural contraction by reason of irritation of their vaso-motor nerves, these remedies, by their sedative action, allay the irritation, relax the spasm and restore the blood current through the kidneys to its normal condition.

The treatment of suppression occurring in connection with surgical shock, if treated in accordance with these general principles, will hold out the best promise of relief.*

*See "After Treatment of Abdominal Sections with special reference to Shock and Septic Peritonitis" (Boise) — *Annals of Gynecology*, Oct., 1893.

The Injurious Effects of Pessaries.

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I PRESENT a pessary recently removed from a woman seventy-four years of age. It is a hard rubber ring pessary, measuring twenty seven cm. in circumference, having a thickness of three cm. and weighing thirty-three and six-tenths grams. The internal orifice designed to receive the cervix is seven and one-half cm. in circumference. It had been placed in the vagina of this patient some two years ago for the purpose of relieving a prolapsus uteri. The first year it occasioned little, if any, disturbance. The beginning of the second year an ex-

tremely offensive leucorrhœa was noticed, which excoriated the vagina and vulva. Pelvic and abdominal pains supervened, but the principal subjective symptom was the leucorrhœa, which had become so objectionable in character on account of the very offensive odor that the patient was obliged to practically isolate herself. Upon examination the vagina was found contracted and inflamed. The pessary could be felt in the upper part of the vagina imbedded in the tissues, which had almost surrounded it completely. With considerable dif-

ficulty it was removed by means of the examining finger, assisted by a large vulsella forceps. Its removal caused considerable laceration of the vaginal mucous membranes and perineum. Hot bichloride douches were advised, and three weeks later, when the patient was again seen, the lacerations had cicatrized and the leucorrhœa, now no longer offensive, had materially diminished in quantity. There was no prolapsus uteri observed.

This case recalls to my mind the advice of Josh Billings, who says: "If I were a doctor, I would treat the patient and let the disease take care of itself." In this case the disease was treated, and the patient, perhaps from her own fault, was without care.

I have had occasion during the past sixteen years to remove twenty-eight other pessaries which had been retained a variable period—none of them more than one year—and had become the starting-point of inflammatory conditions, fortunately none of them of sufficient severity to threaten life.

Many cases are, however, to be found in medical literature illustrating the danger of allowing pessaries to remain in the vagina without care. In American, English, French, German, Russian, Polish and Italian journals there are reported more than 300 cases, many of them collected and classified by Neugebauer. (1).

The vagina was certainly never intended as a receptacle for foreign bodies. The degree of tolerance varies in different cases according

to the form, size and material of the pessary, depending also upon its proper application and care. In one case it became imbedded in the tissues after two months. In other cases it was freely movable after twenty years. Hamilton (2) saw a case of perforation in eight months, whereas in other cases women have worn pessaries many years without serious consequences. In general, however, prolonged use of a pessary occasions unnatural dilatation of the vagina, which in time becomes irritated, inflamed and often excoriated. (3).

The irritation produced by the presence of a foreign body causes an increase, and, at the same time, a rapid change in the vaginal secretion, which soon becomes thickened and then muco-purulent.

Little by little the external genital organs become swollen and the finger, when introduced into the vagina, enables us to recognize a ridge of mucous membrane, the origin of which is difficult to explain, if we do not know the nature of the accident. The ridge is formed by the swelling of the vaginal mucous membranes in front of the anterior border of the pessary. The bladder, which is full of urine, may project above the pubes, where it may be clearly defined by percussion. The great pressure caused by the pessary is added to that which results from the swelling of the mucous membranes and of the sub-mucous cellular tissue, so that the obstruction of the urethra may gradually become complete. The retention of fæces occurring in the same manner is very rarely complete, although one case of

its occurrence has been reported by Bayard (4), and many cases of obstruction of the anus are reported where the pessary has been pressed into the rectum.

Often a forgotten pessary, which has been misplaced, causes inflammation of the tissues surrounding the vagina, resulting in parametritis, pelvic abscess, pelvic peritonitis, general peritonitis with ileus, etc., terminating sometimes in sepsis, which may result in cachexia and death.

In other cases the normal secretion is increased, profuse and offensive; leucorrhœa supervenes; ulcers or even fistulæ may form in the bladder and rectum. It is especially worthy of remark that a part of the increased secretion may gather on the surface of the pessary near the fundus and gradually encrust it with hard calcareous matter, so that in time the opening of the pessary is closed. Ultimately adhesions may be formed with the uterus, resulting in the most serious consequences. These effects are unfortunately seldom made known until too late.

The injuries produced by the presence of pessaries in the vagina act in two ways: They occasion in the entire vagina and especially around it an inflammation which terminates in the formation of fungosities, or which gives rise at one or more points to perforations, which are merely the results of gangrene from compression. (5).

Berard reports the case of a pessary which had remained in the vagina for twenty-five years, finally producing almost complete obliteration. (6).

Instead of the normal vagina there remained only a cul-de-sac, which communicated with the remainder of the cavity and the foreign body, by means of a small opening situated in the upper part.

Considering the injurious effects of pessaries more in detail, I instance:

Thirty-six cases of vesico-vaginal fistula.

Twenty-one cases of perforation of the bladder.

One case of uretero-vaginal fistula.

One case of perforation of the urethra.

Twenty-four cases of perforation of the rectum.

Eleven cases of perforation of the rectum and bladder.

Two cases of perforation of Douglas' cul-de-sac.

Five cases of forcing of a pessary by pressure into the tissues surrounding the vagina.

In a case reported by Deneux, the perforation of the recto-vaginal septum had been occasioned by the stem of a ball pessary. The crown was found to be retained by vegetations. They formed a mass which was very similar to a cauliflower excrescence and scarcely permitted the body and branches of the pessary to be felt in two places (7). The mechanism of these perforations from gangrene is simple. The process often lasts many years. The vaginal, urethro-vesical and rectal mucous membrane are continuously compressed for a long time between the foreign body on the one hand and the bony wall of the pelvis on the other. This results in swelling and redness, infiltration and hardening of the tissues where pres-

sure is exerted, terminating in a slow atrophy, necrosis and fistula.

Other accidents occur. I note:—

Six cases of pessary forced into the uterus. (In one of these cases a ring was introduced by a midwife into the cervix, immediately after labor. Again a glass stem four and three-fourths inches long was retained in the vagina twenty-five years and gradually forced its way into the uterus. In another of these cases a cup pessary was forced into the uterus and remained there several weeks.)

One case of proliferating new growth in the rectum in consequence of protracted use of pessary.

One case of atresia of os and pyometra, resulting in death.

One case of new growths in both walls of vagina.

Three cases of abortion.

Two cases of especially difficult removal during the fourth month of pregnancy.

Eight cases of carcinoma, most probably occasioned by pessary.

Six cases erroneously diagnosed as carcinoma owing to the clinical picture presented on account of imbedded pessary, attended with ulceration, hæmorrhage, offensive odor and pain.

Seven cases of strangulation of portio vaginalis in pessary—in one case during pregnancy.

One case where the entire uterus slipped through the lumen of a pessary during a violent fit of coughing and was so strangulated that the pessary had to be cut into pieces in order to extricate the uterus.

One case where the infection from an ulceration due to a pessary occasioned a kind of typhus. Patient recovered on removal of the pessary.

One case where the patient suffered terrible pains during nine months in a partly reclining and partly sitting position.

One case of chronic peritonitis attended with constant abdominal pains and vomiting.

Many cases of imbedded pessary have been observed. The pessary remains movable in the vagina but will not allow withdrawal. This has been especially observed in the case of egg and ball pessaries, but also in the case of round rings and Hodge pessaries. The cause is undoubtedly partly due to senile shrinkage of the vaginal walls and partly to the contraction of cicatrices. The cicatrices left by ulcers, etc., often cause stenosis of the rectum and finally of the vagina. In addition to the injurious effects already enumerated there are others: pressure on a sunken or inflamed ovary, tumor or tube, cystitis with strangury, tenesmus, etc., caused by large irritating pessaries, exacerbations of old parametritic and perimetritic processes, etc.

Nine cases of death due to pessaries are recorded as follows:

Death from peritonitis following incision of the recto-vaginal wall for the extraction of an imbedded pessary (8).

Death from exhaustion after the extraction of an incarcerated pessary (9).

Death from sepsis caused by ulceration and perforation of rectum after

an operation for the removal of the pessary had been refused (10).

Death from exacerbation of an old pelvic peritonitis (11).

Death in two cases from uræmia following the extraction of a pessary in cases of purulent septic parametritis (12 and 13).

• Death from pyometra in consequence of atresia of os uteri caused by a pessary (14).

Death from ulcerative parametritis and exhaustion (15).

Death from supposed cancer, but at the autopsy was found to be due to a rude pessary made from a spool, which had eaten its way into the bladder and into the cul-de-sac of Douglas, where it lay in a foul cavity surrounded by a mass of inflammatory material.*

The social position of the victims of retained pessaries varied from the highest to the lowest. Their ages at the time of extraction of the pessary, were from nineteen to ninety years. The ages in many of the recorded cases are not given. One woman was eighty; eighteen were between seventy and eighty, nineteen were between sixty and seventy, twenty-one between fifty and sixty years old.

The length of time the pessary was retained varies considerably. In the case of the woman ninety years of age, the pessary had been retained forty-five years. (25). In two instances it remained forty years (26); four times it was retained thirty-five years, once thirty-three years, three times thirty years, twelve times from twenty to twenty-seven years, and so on; the shortest time it caused seri-

ous inconvenience was only a few weeks.

The form of pessary differed greatly. In many cases it is not mentioned. The fashion in pessaries has changed more frequently than the seasons. Forty-one times some form of stem pessary is reported as the cause of serious injury. Almost every variety of pessary has been responsible for some traumatism. The injury has, however, been caused more often from want of care, forgetfulness, disproportionate size and improper adjustment than from any special form or variety.

The material of which the pessary is made has apparently had no etiological relation to the nature or extent of the injury. As a matter of interest it may be stated that the materials reported are cotton, lint, linen, porcelain, oakum, wax, gum, elastic, whalebone, wire of iron, gold, or silver, nickel, tin, aluminium, copper, lead, hard rubber, glass, wood, cork and celluloid.

The injurious effects of pessaries are not alone occasioned by their presence. Various accidents have occurred in the attempts that have been made at their removal. The pessaries themselves have sometimes become corroded by the altered vaginal secretion so that new mechanical dangers have been added to those due to the prolonged presence of a foreign body.

In a case reported by Morand, the pessary was found perforated in several places apparently from the effects of the acid matters which were secreted by the vagina. These irregular openings were filled with

*E. W. Cushing, personal communication.

portions of the vaginal mucous membrane, which had become elongated and swollen in the thickness of the pessary and had formed hooded excrescences retaining putrid matter in the cavity of the pessary. (16).

Occasionally more than ordinary difficulty is experienced in the removal of pessaries from the vagina and numberless accidents occur. Mayer in extracting a bullet-shaped pessary adhering closely to the vagina bored into it with a wooden screw and tore away large pieces of the vagina (17).

In cases of imbedded pessaries there is often exceptional difficulty. In one case systematic dilatation of the vagina by means of sponge tents was necessary for several days in order to ascertain the presence of the pessary. Great difficulty was experienced in its extraction. (18). In five cases there was laceration and tearing of the vaginal wall. In removing a lindenwood pessary a portion of the anterior vaginal wall was lacerated so that a piece of mucous membrane two inches in length was partly torn off, and fell away on the sixth day from gangrene. (19). On another occasion the posterior vaginal wall was perforated into the peritoneal cavity (20).

Janin found in one case the upper part of a pessary bent backwards and more than half the staff penetrating the rectum, in which it could be distinctly felt. The fæces escaped by the vagina. Incisions were made with a bistoury in order to disengage the pessary from the fragments which held it. The fæces gradually resumed their ordinary course, and at

the end of a month only a small fistula remained. The half of the staff which was in the rectum was covered with irregularities of a black color, very fetid and covered with shining crystals. The portion lodged in a fold of the vagina was covered with a stony incrustation, which had at its lower part a slightly convex facet an inch in length (21).

The treatment of neglected pessaries consists in their removal from the vagina or the neighboring viscera or tissues in which they may have become imbedded or displaced. Fortunately in most cases this is a comparatively easy matter. The finger often suffices to dislodge and remove the pessary, which may conveniently be steadied, if necessary, by a bullet or vulsella forceps. Care must be taken to avoid undue laceration of the vaginal tissues. In some instances it will be advisable to separate the adhesions that have formed about the pessary, thoroughly disinfect the parts by antiseptic douches and, after an interval of several days when the pessary has become detached and freely movable, proceed to its removal. Occasionally a pessary will have to be extracted by fragmentation. Holmes speaks of a case where a metallic pessary was so firmly imbedded that it became necessary to incise the perineum in order to facilitate its extraction. (22). In a similar case Lisfranc made a posterior vulvar incision.

The adhesions present will often necessitate the division of the pessary by means of bone forceps before its removal becomes possible. Occasionally a metacarpal saw may be used

with advantage. The pessary will perhaps have to be held by a forceps and the vagina widely dilated by some form of Sims' specula. Chrobak and v. Ott in extracting ring pessaries made use of the galvano-caustic platinum wire snare, which Neugebauer regards as an excellent way, safer than any other (23). In other cases incisions of the soft parts of the patient will be necessary. The injuries inflicted will, of course, be as limited as possible and will be antiseptically repaired as far as practicable, but it must be remembered that the history of all cases shows the necessity of removing the pessary, if the life of the patient is to be saved.

A pessary lying in the vagina has been observed to be held firmly by a cystocele. In two cases where the extremely inverted anterior vaginal wall presented itself in the rima vulvæ a rubber ball pessary was noticed in the upper portion of the vagina (24).

In cases of this character and in cases of perforation of the rectum, and especially the subvaginal cellular tissue and peritoneal cavity, the greatest care must be exercised. By carefully reducing by means of retractors the cystocele or rectocele present, the pessary can usually be reached, and systematic measures instituted for its removal.

In case abscesses have formed in the tissues surrounding the vagina, the treatment of the impacted pessary will consist not only in its removal, but in the treatment of the dangerous concomitants.

I cannot in this connection discuss

the subject of pelvic suppuration. I must, however, be allowed to insist upon the importance of free and absolute drainage, secured at any cost, by any means — even by the removal of the uterus and adnexa, in case other means are inefficient.

The consideration of my abstract of more than three hundred cases of the injurious effects of pessaries, suggests naturally the inquiry as to the advisability of the use of pessaries in general. Personally I can make answer very readily. My experience with pessaries during the past ten years has consisted solely in their removal. Some form of the Alexander operation, the operation of colporrhaphy, perineorrhaphy, trachelorrhaphy hysterorrhaphy and in a few cases hysterectomy — singly or combined, according to the requirements of each individual case — have sufficed in my experience and that of my assistants to control all displacements of the uterus, as well as all inconveniences occasioned by them.

I do not, however, presume dogmatically to assert that pessaries should be banished as a relic of barbarism. I cannot agree with Fritsch that the sale of pessaries should be restricted like that of poisons. I consider it unwise to discard the use of pessaries altogether. There are many cases where the judicious use of a pessary makes the woman feel "like newborn," as Neugebauer graphically expresses it. Moreover, every physician is not accustomed to do plastic gynæcological operations, nor can the patient in every case submit to operative procedures. The physician who inserts a pessary should,

however, realize its powers for evil as well as for good. He should insist on frequent examination; he should be on the alert for the possibilities; he should remember that deviations of the uterus have not the importance that was attached to them twenty years ago; he should remember that the inflammatory conditions of the tubes and ovaries frequently cause a prolapse of these organs into Douglas' cul-de-sac, and, that eminent gynecologists to-day do not hesitate to assert that cases of so-called retroflexions of the uterus are all of them really tubes or ovaries often bound down by adhesions behind the uterus. These facts should be remembered by every practitioner, and he should further understand that a pessary, if suitably applied, causes relief and not distress. In case the patient complains of sensations of pressure or of other inconveniences, the possibility of incorrect adjustment or improper application should not be forgotten. Above all things the patient should be instructed in the care of the pessary. It should be remembered that she carries in her vagina a foreign body which requires attention. At suitable intervals it should be removed, cleansed and disinfected, and the opportunity should be utilized to ascertain the benefits or injuries occasioned by its use. The vagina should be regularly and systematically douched, not alone to disinfect the parts, but also to remove the excess of secretion resulting from the presence of the pessary. These measures are easily carried out in private practice. In hospital, and especially in dispensary practice, they are imprac-

ticable, as a rule, and for this reason, if for no other, the pessary should, in my opinion, be rarely advised in such cases.

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Report of Two Cases of Extra-Uterine Pregnancy. Operation—Recovery.¹

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ALTHOUGH extra-uterine pregnancy may be looked upon as one of the rarer manifestations of nature's aberrant function, yet its occurrence is so frequent that one must always think of its possibility in any pelvic tumor. In most cases it is of tubal origin, and may be either extra-peritoneal or intra-peritoneal, the latter situation being due to rupture of the sac and expulsion of the ovum into the peri-

toneal cavity. Rupture usually takes place between the tenth and fourteenth week, and most frequently through the upper and free surface of the tube; but occasionally into the folds of the broad ligament. Hæmorrhage and shock are usually so great when rupture takes place into the peritoneal cavity that death of the mother speedily results. If this does not occur, the ovum and extravasated blood may become digested and absorbed by the peritoneum; or

¹ Read before the Medical Society of Western New York.

suppuration may occur and death result from the absorption of septic matter; or, the ovum may, by transplantation, grow to full time and then die or be removed by operation. If the rupture takes place between the folds of the broad ligament, the extravasated mass may, and often does, entirely disappear; or, it may continue to grow and be removed by operation; or undergo suppuration and be discharged in pieces through the bladder, rectum or vagina.

The difficulties in connection with the early diagnosis of extra-uterine pregnancy are often very great, and as the vast majority of cases come under observation only after rupture has taken place, conservative measures are not often applicable. Moreover, the diagnosis is often only made by delivering a suspicious mass in operation, when what was thought to have been a pyosalpinx or ovarian abscess, or dermoid cyst, is found to be an unrecognized ectopic gestation. The converse is equally true. Still, we often meet with cases so clear in their clinical features that a diagnosis can be made with reasonable certainty; and then an operation, if undertaken, is simple and uncomplicated and with the smallest possible mortality.

The two cases which I have operated upon present the following histories:—

On October 23rd, 1893, I was called to see in consultation with Dr. Gilray, Mrs. L., aged twenty-eight; married twice; no children. Menses first appeared when fourteen. No pain and always regular. Second marriage occurred fifteen months ago, and four years after the death of the

first husband, whom she lived with two years without bearing him any children. Three months after this second marriage, she had an attack of inflammation which lasted two months. She was in bed three weeks. After this illness, she was quite well until three weeks ago, when Dr. Gilray was called to see her. While combing her hair one morning before a looking glass, she felt something give way, and so great was the pain and the shock, she fell upon the floor. For some weeks previous to this attack, she had irregular discharges of blood from the vagina, and was also nauseated; yet there was no suspicion on her part of pregnancy, since she had been so many years sterile.

I found, upon examination, a tender mass filling the left side of the pelvis and cul-de-sac. The right tube was thickened, but evidently from old trouble. The uterus was somewhat movable antero-posteriorly. The history pointed so strongly to a ruptured tubal pregnancy—together with the fact that there now existed in the pelvis a large mass which could not be disposed of by any means short of surgery—an operation was recommended at once. The patient acquiesced, and I took her to the Women's Hospital, and, after suitable preparation, opened the abdomen. A mass the size of one's closed fist was removed; and, upon dissection, was found to be the tube and ovary. The tube had ruptured on its under surface, and it was surrounded by a mass of firm coagulated blood, stratified, and in the centre of this mass was the amniotic sac, un-

broken, and containing a seven week's embryo with placentas and cord attachment. The right tube and ovary were loosened from their adhesions and removed. The tube was very much thickened; its fimbriæ closed; and the ovary was dense, firm and enlarged. The peritoneal cavity was thoroughly irrigated and a drainage tube was inserted. There was free drainage for the first six hours, and at the end of sixteen hours the tube was removed. The patient made an uneventful recovery and left the hospital on the sixteenth day, and is, at present, a perfectly well woman.

Mrs. J., married, aged thirty-five. Six children. Youngest three years old. No miscarriages and no history of any pelvic inflammation. Always a well and healthy woman, and never had to consult a doctor except when her babies came. Regular, no pain, and flow lasted three or four days. On August 11th, 1894, her period was due, but it did not make its appearance until the 16th, when she flowed about as much as usual. Instead of stopping in four days, she continued to lose some blood and used from one to three napkins a day until she consulted me on October second. She had no nausea or vomiting. She complained of some pain in the lower abdomen on the right side, and she was weak and ænemic from loss of blood. She saw no shreds or pieces of membrane. The breast symptoms were negative, but there was slight discoloration about the meatus and labia minora. Upon examination, a tense, elastic and somewhat movable tumor could be felt in the right side,

which could be clearly defined by combined manipulation. It was not tender, and the uterus was freely movable and enlarged. The os was slightly patulous, and dark blood was discharging from the uterus. A diagnosis of extra-uterine pregnancy was made: first from the continued hæmorrhage, which had not abated by rest and medicines which she had taken; second, an enlarged uterus, and to the right side a clearly defined, painless tumor; third, slight discoloration of the meatus.

After having stated the case fairly to the husband and the necessities of an operation, even if the tumor were but a simple ovarian cyst, the patient was removed to the Women's Hospital and an operation performed on the following morning, Dr. Frederick assisting. The os was dilated and the interior of the uterus thoroughly curetted and packed with iodoform gauze. The abdomen was then opened and the tumor, which was of a dark bluish appearance and the size of one's closed fist, was separated and removed. During the delivery it ruptured and some dark fluid, mixed with clots, escaped. The left tube and ovary were found healthy. The abdominal cavity was thoroughly irrigated and a glass drainage tube was placed in position. The wound was closed and the patient was put to bed.

I then examined the specimen more carefully, and found it to be a dilated tube. Its fimbriated extremity was closed and the fimbriæ and outer end of the tube were greatly distended with hard, more

or less organized blood. Upon careful dissection, a placenta was found attached to the roof of the tube, from which the cord was traced into a hard mass, which, upon further examination, proved to be about a ten weeks' embryo.

The patient made an excellent recovery. No nausea or vomiting followed the operation, and the drainage tube was removed in eighteen hours.

The history of the first case is clear and classical, and tells us of the terrible dangers of extra-uterine pregnancy.

First. There was no suspicion of pregnancy.

Second. There was a long period of sterility.

Third. A sudden rupture of the sac; but, fortunately, a small rent on the inner and under side of the tube, and therefore no great hæmorrhage occurred, as the opening became occluded by a firm coagulum about it.

Fourth. Operation before another fatal hæmorrhage took place and the removal of the dangerous mass, as well as the other tube and ovary which, sooner or later, would have caused much suffering and future trouble.

Fifth. There was no free blood in the peritoneal cavity. The first hæmorrhage was, no doubt, slight; yet sufficient to have caused sudden and great shock and even collapse.

The second case would have ruptured at any moment, as the tube was exceedingly thin. Moreover, the manipulations of frequent examinations, or even the application of electricity, would, I am sure, have caused the thin tube wall to have given way. and, no doubt, fatal shock and collapse would have resulted. The operation was a very simple one, as such early operations usually are, and the patient made a quick recovery. There was no history of previous pelvic trouble, or attacks of inflammation; but, no doubt, a tube can be slightly diseased and offer a favorable seat for the development of an extra-uterine pregnancy, and cause no appreciable symptoms. This woman had no suspicion that she was pregnant, nor did she suffer from nausea and vomiting, — constant and early symptoms in her previous pregnancies.

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EDITORIAL.

The Dangers and Results of Symphyseotomy.

SYMPHYSEOTOMY has for the last two years been a much talked about procedure among the practitioners of the obstetrical art. Much has been said in favor of this operation, and it certainly has its indications. Symphyseotomy is by no means a new operation, but it has benefited by antisepsis as other procedures have, and it is now becoming an operation *à la mode*; the indications for its performance are so well-defined that, if our information received is good, there is a certain Paris school which is on the point of putting it into practice in every case where formerly other methods were employed. This is without doubt an exaggeration, and this teaching is far from being accepted by accoucheurs who have practised the operation in certain cases with excellent results; but this is not the point that we wish to discuss.

Dr. Fraipont, in a paper read before the *Société Médico-chirurgicale de Liège*, affirms that symphyseotomy is an operation not unattended by some danger, and in this is he right? Or should Dr. Carusio's opinion put forth in his thesis entitled "*Controbutioi alla pratica della sinfisotomia*," be accepted, when he says that if death occurs after such an operation, it is the fault of the operator and not the operation.

Let us show Dr. Fraipont's arguments. This writer invokes, in the first place,

what he says are the most recent statistics and gives the following figures: In France, of thirty-three symphyseotomies performed in 1892 there were six deaths, consequently a mortality of eighteen and one-tenth per cent. In Germany, according to the statistics furnished by Frommel, of a total of seventy-eight symphyseotomies, the mortality for the mothers is eleven and five-tenths per cent., and twenty-eight and two-tenths per cent. for the children. As is seen, this is something to be taken into consideration if statistics are to be relied on. Death in these cases was due to hæmorrhage, shock (an indefinite term), and even to septicæmia, according to Dr. Fraipont.

If now we compare symphyseotomy and the Cæsarian operation, Dr. Fraipont finds for the latter operation a mortality of two and eight-tenths per cent., out of a total of thirty-five cases, and the mortality of the child is also much lower. The complications arising in symphyseotomy are hæmorrhages taking place from the retropubic venous plexus, or from the clitoris; tears of the bladder and vagina have been reported, leaving sometimes urethral or vaginal fistulæ.

As to the ulterior condition of the patient, much has been written. It is certain that in many cases the symphysis does not unite, and the motility of the iliac bones one on

the other has produced functional troubles either in the legs or in the urinary organs. Consequently, the suture of the pubis is indicated, which, according to some obstetricians, should be done immediately. The suturing of the pubis succeeds very well, and may be resorted to when reunion does not take place.

These are the arguments of Dr. Fraipont which we give and will not discuss them here. According to this accoucheur, symphyseotomy should not be abandoned, but the surgeon should know how to limit its indications. It is certain, if understood in this light, that momentary widening of the pelvis is a most recommendable procedure, and this is the opinion upheld by a friend of Dr. Fraipont, Dr. Lambinon, who is also a partisan for symphyseotomy under certain circumstances, without, however, taking too much credit away from induced labor and the Cæsarian operation.

As to the after results of symphyseotomy, an interesting article by Dr. H. V. Woerz has appeared in the *Centralblatt für Gynækologie* for September 28, 1894, in which the author relates ten cases of symphyseotomy performed in Professor Shauta's clinic, which are studied principally as to the advantages of suturing the pubis with silver wire. In five cases in which the suture was successful,

union was effected in a rapid, complete and definite manner. The patients were able to walk as soon as they left their beds, and the symphysis pubis was immovable and remained so. In four cases in which the suture for some reason or other did not hold, a difference was noted between immediate and tardy results. At the time the patients left the hospital, there existed a diastasis of the bones of the pubes, which were united by a bridge of connective tissue. This diastasis produced considerable difficulty in walking in one of the four patients. Two of them were followed over a year, and in these two the progressive disappearance of the diastasis and gradual solid reunion of the pubes could be noted.

Contrary to Dr. Fraipont's remarks, Woerz states that in his cases the lesions of the soft parts produced during the operation were not followed by any disagreeable accidents, and although this happy result has been recorded by the German writer, we think that from what has been said, the accoucheur should bear in mind the possible complications arising from operative lesions of the vessels, and, before closing the wound too hastily, to make sure by means of tampons whether there exist a hæmorrhage, in which case the proper hæmostasis may be accomplished.

SOCIETY PROCEEDINGS.

 Proceedings of the American Association of Obstetricians and Gynæcologists.

(CONTINUED FROM NOVEMBER NUMBER.)

FIRST DAY — AFTERNOON SESSION.

DR. GEORGE S. PECK, of Youngstown, O., read a paper entitled

APPENDICITIS: REPORT OF SEVEN CASES, FOUR OF WHICH WERE SURGICALLY TREATED DURING THIRTY-SEVEN CONSECUTIVE HOURS. (See "Annals," p.p. 81-96.)

Out of the great amount of literature, controversial and otherwise, three important landmarks are established:

1. That for all practical purposes all inflammatory processes in the right iliac fossa arise from the vermiform appendix.

2. That practically the vermiform appendix is always intraperitoneal, and that any operation undertaken for appendicitis that does not involve the entering of the peritoneum is false in its surgical conception.

3. That idiopathic peritonitis does not occur; that many cases diagnosed as such are really cases of perforating appendicitis.

From a careful consideration of pathological conditions and clinical histories, appendicitis may be classified in the following varieties:

1. Acute perforating, fulminating appendicitis with general peritonitis.

2. Acute suppurating appendicitis with local plastic peritonitis and abscess.

3. Subacute appendicitis, variously termed catarrhal, chronic, relapsing,

or obliterating appendicitis or appendicular colic (Talman).

It is not claimed that pathologically these conditions are absolutely distinct — quite the contrary is true — but that the type is determined by the amount of bacteriological invasion and the degree of immunity possessed by the patient. That perforation occurs very much earlier than is commonly believed can be demonstrated by many clinical histories and early operations. It may mark the onset of the disease. That the prognosis in acute perforating appendicitis, with or without operation, is always grave; that operations undertaken while perforation is impending but has not occurred are followed by fatal results by extension of inflammation in many cases; that acute suppurative appendicitis with local peritonitis presents the most favorable field for operation during the attack; that removal of the appendix is to be undertaken with great circumspection when it lies in the wall of an abscess cavity, are claimed.

The third group of cases do not require operation during the first attack, but if repeated attacks occur operative interference is demanded. Operative results in these cases are most favorable.

Errors in diagnosis are yet common and arise from two causes, namely, carelessness in treating abdominal diseases without physical examination, and mistaken pathological notions.

The profession has awakened and neglected cases are much less common than formerly. That in the future cases will be seen and operated upon earlier, and the results will be correspondingly improved, is believed.

DR. JOSEPH HOFFMAN, of Philadelphia, followed with a paper entitled

PUS IN THE PELVIS, WITH SPECIAL REFERENCE TO APPENDICITIS AND ITS TREATMENT.

Others disease and disorders have manifestations peculiar to themselves, but pus may be the product or resultant of every disease, broadly speaking. It was long before this was a recognized fact in reference to the abdominal cavity. Women died with pints of pus bathing their viscera without its presence ever having been suspected, and idiopathic peritonitis held sovereign sway in death certificates and pathology. Once it was discovered that pus might get into the abdominal and pelvic cavities, then the wise men in physics began to discover reasons why it ought to get out of itself just as it got in, and the let-alone doctrine held sway, with opium and poultices for its viceroys.

If there is pus in the liver we are often left to surmise it, though the exploring needle is a safe means of diagnosis. But the general manifestations of pus are not to be considered except incidentally in this contribution, and we will consider briefly the various organs in which pus makes its appearance. In the order of its probable frequency may be mentioned the kidneys, appendix vermiformis, tubes and ovaries, liver, pancreas and spleen.

In the kidneys its symptomatology is different according to the cause. If from a stone in the pelvis of the

organ, the usual manifestations of pain and renal colic are present previous to suppuration; while if the origin is from the urinary tract by the transmission of purulent matter up through the bladder along the uterers, at last reaching the kidney, there is a previous history either of general disease, cystitis from some cause, enlarged prostate with retention, or chronic cystitis from stone and suppuration. Either one of these causes has a perfectly distinct history, and the treatment, with the exception of the removal of the stone from the kidney, is identical.

If an abscess goes on to rupture into the peritoneal cavity, operation can only give the slightest chance of success when done at once. So also into the other cavities, the pleura and pericardium. It must also be remembered that abscess of the liver may simulate the same disease of the kidney, and that the disease of the latter organ has been mistaken for that of the former. The presence of abscess of the spleen, as well as of the pancreas, is so rare that diagnostic features are wanting except in a general way. The nature of the organs is such that when abscess is present it must soon make its way into the peritoneal cavity, and then, from the symptoms of peritonitis as they exist under other circumstances, operation will be indicated, and begun most probably as exploratory and end with the removal of the offending organ. Pus as a foreign element is most common in the pelvic organs. Appendicitis is a most frequent cause of the trouble, and, alongside of tubal and ovarian diseases, it is the most prolific of causes. The diagnosis of pus as a concomitant of appendicitis is not always an easy matter.

The history of cases is that where one case escapes without suppuration, in which no effort is made to save

the patient, a vast number do not. So it is in recurrent attacks of appendicitis. Those who have most studied the condition, who have watched patients said to have recovered, know that in a great majority of instances they finally go into other hands and either die in an attack or escape by operation. Operation in these forlorn cases has its justification only in the hope that a saving chance is offered an otherwise necessarily hopeless case.

Considering that the uterus is the starting point of the pus infection, physicians anticipate the clearing out of the tubes and ovaries, when infected, by the curretting of the uterus. This idea is worthy of as little sound consideration, no matter by whom advanced, as the vagaries of a madhouse brain. It has no common sense to originate it, and it has not a surgical argument to support it.

The rules to be laid down for the relief of pus in the abdomen are to get at the point of suppuration, the cause, and remove it. If this is impossible, as it is in some cases of appendicitis, and the peritoneal cavity is shut off by adhesions, the evacuation of the pus by incision over the abscess is the best procedure to save the life of the patient, and that is all we are after. If the patient is in a condition to find and remove the appendix, so much the better, but the best thing is to work so that life can be saved. In appendicitis we have one of the most trying operations in surgery, for the simple reason that the relation of the parts is not constant, and he who operates expecting to find the appendix by McBurney's or any other point will be wofully disappointed. In the presence of pus in the pelvis, apart from the appendix, when the ovaries and tubes are involved, the best operation is by all odds the complete one. Remove the

offending organs, and these in the great majority of cases can be removed by the experienced hand. If the hand is not experienced it had better be out of the case. In the presence of hæmorrhage, gauze or sponge packing is a valuable aid in controlling the blood. In the presence of pus, gauze packing is to be deprecated unless to shut off the peritoneal cavity from infection. In these cases it is only to be used if we are satisfied that there is more risk without it than with it. Gauze will not drain pus; it will only hold it in.

Treat each case according to the demands it makes and the complications.

FIRST DAY—EVENING SESSION.

The discussion of the papers on appendicitis was proceeded with, the opening remarks being made by

DR. ROBERT T. MORRIS, of New York.—I am not inclined to say much this evening on the subject of appendicitis. I would say, however, that I am opposed to and dislike the classification of cases as men classify them today. Most men who have been trying to classify cases of appendicitis have classified them from their ultimate symptoms. I believe appendicitis is an infective, exudative inflammation of the appendix vermiformis.

Mistakes in Diagnosis.—I think men who are engaged in making diagnosis of appendicitis very seldom make a mistake. I have had occasion to see a great many cases of this disease and have removed a good many appendices; and though I do not profess to have more diagnostic acumen than my confrères, I yet have been misled in one case of tuberculosis of the appendix, and in another of carcinoma of the appendix, in which,

a year or two after an attack of typhoid fever, I removed a normal appendix from among adhesions which I believed had been caused by chronic appendicitis. These are the only cases in which I have been deceived.

As to the analysis of foreign bodies, it is quite true we do not find cherry seeds, grape seeds, and various other seeds in the lumen of the appendix. I have had a pretty large collection of specimens carefully examined and analyzed, and I find more frequently than anything else calculi consisting of calcium phosphate and a little inspissated fecal matter and fat. The proportion of fat was very great in several of the specimens examined. It is rather difficult to account for this proportion of fat, especially as some of the concretions were large, and, as the lumen of the appendix was cut off from the lumen of the cecum, it occurred to me that possibly it may be due to retrograde metamorphosis of the lymphoid cells of the appendix.

With reference to the question as to whether we had better separate adhesions, it had better be determined by the operator himself, who knows his results following his particular technique. Every man in surgery is a law unto himself. If I were to practice drainage as Dr. Price practices it I could not obtain the results that he does. But, personally, I separate the adhesions in almost every case of appendicitis upon which I operate. I do this in searching for other collections of pus. I do it to separate loops of bowel held in bad position by adhesions which would strangulate the bowel, and to prevent readhesion in a bad position. I believe that can be done, but it would be unsafe to teach this.

DR. JOSEPH PRICE, of Philadelphia.—The remarks of Dr. Morris on appendicitis to which we have just lis-

tened are the best I have ever heard, and his closing remarks are quite sufficient. We may all go home without any further discussion of the subject. I agree with him excepting in one point—namely, that he would not dare teach what he would do himself in these cases. And to verify and emphasize that point I will simply allude to the statistics of one of the papers. For instance, in speaking of the separation of adhesions and delivering the appendix, or in alluding to the recurrence of cases, the author gives two fatal cases in twenty. That of itself should be a sufficient argument for surgeons to follow the practice advocated by Dr. Morris of completing all operations, removing the cheesy, disorganized appendix, and breaking up all adhesions. I am sorry Dr. Morris does not stand out and insist upon others doing just what he can and does do successfully.

Dr. Morris has alluded to foreign bodies, and I am rather inclined to think that the variety of foreign bodies found in the appendix is much greater than is ordinarily supposed. A short time ago a Philadelphia surgeon found a fish fin in the appendix, and another gentleman found two sugar-coated pills. We know that cases of appendicitis increase about the strawberry and grape season. A few years ago an intelligent gentleman, a man of considerable wealth and leisure, travelled around the world and had twenty-four attacks of the disease in different parts of the world. He was treated by twenty-four or more physicians and by some declared cured, when, in the twenty-fifth attack, Dr. Agnew removed the appendix and the man recovered.

DR. A. H. CORDIER, of Kansas City, Mo.—I have seen a great deal of the work of Dr. Price and I have done a little of this class of work myself, and must beg leave to differ from them

in regard to breaking up adhesions in this locality. I wish to call attention to the fact that there is a great deal of difference between pus found in the appendix and that in the pelvis. If we accept the theory advanced by Dr. Price, that the majority of cases of pelvic suppurative diseases are caused by gonorrhœa, we must accept the fact that this is a form of poisoning brought about by the gonococcus of Neisser. It does not invade the peritoneum to the same extent, and it is not as dangerous a micro-organism as the bacillus coli communis. We have a different septic germ in this locality. If we go to work and break up the adhesions in a case of appendicitis that are walled off, we are sure to have a larger mortality than if we simply make an incision, evacuate the pus, clean out the cavity, and introduce rubber drainage in addition to gauze packing. My results in operating for cases of appendicitis have been extremely satisfactory to me. Where I find them with walled-off abscesses I simply make an incision, evacuate the pus, and drain as in other localities.

I wish to speak now of the symptom — colic. We pay too little attention to colic occurring in the abdomen. A patient presents himself with colic occurring from year to year, and it is more significant than we are disposed to think. Two weeks ago I operated upon a gentleman for appendicitis who lost a son three months before from this disease without an operation. He presented a history of having had repeated attacks of colic for eighteen years. He said he had never had an attack of appendicitis to his own knowledge. On the morning of the operation I saw him in consultation with a normal temperature and pulse, but pain in the region of the appendix, this attack differing from previous ones. Appendicitis was diagnosed and I operated on him the next day. I evacuated fully a

teacupful of pus and found a gangrenous appendix.

With regard to foreign bodies, in one case I found a piece of chewing gum, in another a piece of wax, and in a case I found a cherry-stone, which the patient had swallowed a week or ten days before, that had gotten into the appendix. From moisture and heat it had swollen and torn a hole into the peritoneum.

DR. J. B. MURPHY, of Chicago. — This battle of appendicitis has been contested all along the line. The first thing we had to defend was the presence of pus in these cases. Almost every general practitioner that you discussed the subject of appendicitis with would say, "There was no pus in my case. The patient got well." Finally, after careful examination at the post-mortem table, it is practically agreed that in every case of appendicitis there has been or there is present pus. What will be the outcome of that pus? You know the way in which Nature performs so-called cures or takes care of this disease. Every general practitioner will tell you how many cases he has had with recovery. At a meeting in one of our Western cities this summer, a practitioner who lived in a hamlet of two or three hundred inhabitants had sixty-two recoveries from appendicitis! They were not of the variety that came under my observation.

A word with regard to the pathology. We agree that some cases get well without operative interference. What cases will you, and what cases will you not, operate on? These are two things we want to settle. What shall we do with a man in his first attack of appendicitis? Shall we wait? That is the question. In his first attack what happens? He has his first symptom either from a perforation, from an invasion with infection of the mucous membrane, which is the most common, or from an ob-

literation. The outcome of these three things will be all the pathological conditions that you can possibly imagine, almost, in the peritoneal cavity. In the early stage what have you to contend with? By the early stage I mean at the time when the patient has his first symptom. You have a disease at this time that is limited to the cavity of the appendix, while a few days later — many times a few hours — it has no limitations except the peritoneal cavity. What would you do with pus of that dangerous variety anywhere else? Of course you would cut down, evacuate it, and try to save the life of your patient. When a patient has unmistakable symptoms of appendicitis, not tomorrow, not to-day, but *now* is the accepted time to operate. The symptoms of the disease are more definite and less liable to mislead the surgeon in the early stage than the symptoms of any one affection I know of, excepting pneumonia. We must not delay operative interference until tomorrow, but resort to it at once. Whenever you have a patient with a sudden attack of pain in the abdomen, with nausea and vomiting, increased local tenderness over the seat of the appendix, with perhaps a rise of temperature, you may conclude that you have a case of appendicitis to deal with. There are very few conditions in the abdomen resembling that. Indeed, the exceptions are so few that we can lay down a rule, except in diseases of women where there has been a previous history of trouble. Even if you have symptoms on that side of the abdomen in a woman, I think the indications are just as great to operate as in the appendix. As soon as you have the symptoms I have mentioned you should at once proceed to prepare your patient for an operation.

DR. J. HENRY CARSTENS, of Detroit. — Dr. Murphy has said nearly everything I wanted to say. I per-

fectly agree with what he has said, but I must differ from Drs. Morris and Price with reference to one point. There are cases where there is no earthly need of going down and breaking up adhesions, removing the appendix, and so on. I am fully in accord with Dr. Cordier's remarks, that there is a vast difference between pus from the gonococcus and that which we get from the bacillus coli communis. That is not the only thing: we have sometimes a streptococcus in there.

I desire to emphasize the point brought out by Dr. Murphy and for which I have been criticised in my own city — namely, that in the present state of our knowledge we cannot always tell whether we have a severe or mild case of appendicitis to deal with.

DR. E. W. CUSHING, of Boston. — I agree fully with what Drs. Murphy and Carstens have said. I simply wish to call attention to one point in Dr. Peck's paper, about a secondary operation for freeing the bowel. I would be glad to have this point referred to in the further discussion of the papers, because I think one of the most important things in the whole subject of laparotomy is whether we can do anything for the patient after the operation in relieving bowel obstruction — whether we shall open the abdomen again.

DR. W. E. B. DAVIS, of Birmingham, Ala. — Reference has been made to purulent peritonitis as being dangerous in connection with appendicitis. We are told that the question in regard to the appendix and tubal disease is settled, and now we are to decide what to do with this affection. I think if there is anything to do it would be to prevent it. When we get general suppurative peritonitis it is my opinion that we can do nothing for our patient. We have a local condition of sepsis that will kill the

patient, even though we might relieve the general condition; therefore I think the treatment of purulent peritonitis is preventive. It is the only treatment that we can succeed with. Cases have been reported of suppurative peritonitis; they are not cases of purulent peritonitis, but cases of large abscesses which have ruptured into the cavity, which have been cleaned out before there was peritonitis which could have produced these abscesses in the general cavity.

In regard to breaking up adhesions, I will speak briefly of the treatment of appendicitis. It must be borne in mind that the most dangerous kind of appendicitis, that produces peritonitis in twelve hours, also produces the same condition that we get in stab wounds of the intestines. You all recognize the fact that you cannot save these cases unless you operate within the first day. Many of the cases that need our help are cases of fulminating appendicitis, in which death comes from obstruction of the bowels. I am sure it has been the experience of all of you that in the majority of cases in which you are called upon to operate upon the bowels they do not have invagination, but obstruction due to dynamic causes. Paralysis and inflammation of the bowel not due to obstruction of the bowel from mechanical sources is not an uncommon thing to meet with. The patients that most need an operation do not call us in time to operate. The cases of appendicitis that we see on the second or third day we can usually save, because the pus is circumscribed.

With regard to removing the appendix and breaking up adhesions, I think Drs. Morris and Price have advocated a dangerous practice. They have recommended a system of treatment which will, if adopted, cause many deaths. I can conceive of nothing so dangerous as allowing the smallest quantity of this offensive

septic pus to escape into the abdomen. In the last year, by gentle manipulation of the abscesses, I have had two secondary abscesses produced by the escape of pus, and the patients came very near dying. If you do not find the appendix by very careful and gentle manipulation you had better let it alone.

Reference has been made to foreign bodies being very frequent causes of appendicitis at certain times of the year. I think the cause is due to a catarrhal condition brought about by eating too much fruit, not from the seeds themselves.

DR. A. VAN DER VEER, of Albany, N. Y. — Dr. Peck has placed on record cases that, if we study them carefully, will be of value to us and to him. As has been remarked by Dr. Davis, I do not believe it is possible to cure septic peritonitis in which we have the bacillus coli communis. We have the perforative and fulminant forms of appendicitis, that go on and are precisely like gunshot or stab wounds. If we could reach these cases early enough, lives might be saved; but how many surgeons reach the patient in time to perform a life-saving operation?

As to foreign bodies, I do not think this is a matter of so much importance, but fecal concretions are found in a great many cases. I have a number of specimens that I have preserved, but I believe with Dr. Price that at certain periods of the year, during the blackberry and grape season, more cases of the disease are liable to occur. The cecum is filled with seeds. It does not hold impacted feces particularly, but it holds foreign substances in such quantity as to produce irritation of the mucous surface of the appendix, and by extension of the irritative or inflammatory process we meet with a greater number of cases at the time of the year when fruit and certain forms of vegetables are eaten with greater free-

dom. A word about the cases in which we do not find foreign substances—they are cases of the catarrhal form of the disease.

As to the time of operating, I am an advocate of early surgical interference, although I have operated on six cases of relapsing appendicitis without a death.

DR. C. A. L. REED, of Cincinnati.—I was called by an intelligent physician to examine a case that presented a classical history of appendicitis. The doctor had been hesitating about the necessity of an operation, although he recognized there was inflammation about the head of the colon. He concluded it was one of those cases the tendency of which was to recover, and the point upon which he deferred operation was the fact that he was unable to discover McBurney's point. There are a great many members of the profession who believe in McBurney's point; they look for it, and they do not call in a surgeon until they think they can find it. I wish to emphasize the fact that this point must not be looked for.

I recently operated upon a man who came to me with a relapsing appendicitis. I operated upon him in the midst of the twenty-first attack. He was a stout, well-built man. I could make out no physical symptoms whatever, but the history was classical, and I operated in the midst of the acute symptoms. I found the head of the colon adherent to all the proximal surfaces. Bringing it up, I found where there had been seemingly spontaneous amputation of the appendix and closure of the orifice. I could find no pus about the head of the colon, yet the symptoms in the midst of which I was operating pointed unmistakably to pus. I enlarged the incision, liberated the adhesions, and three inches above the head of the colon I found a pocket containing not more than an ounce

of pus which had already perforated the parietal peritoneum and was burrowing into the abdominal wall, and within two inches of this, and two inches further remote, I found the appendix alive and well, being nourished by its adhesion to the colon. When we wait for positive symptoms, when we wait for a positive diagnosis, we simply welcome our patient into an untimely grave.

DR. JAMES F. W. ROSS, of Toronto.—I take issue with Dr. Davis with regard to large intraperitoneal abscesses. I have opened the peritoneum of a little girl, from which pus and gas spurted out like soda water out of a siphon, and after the operation the patient lived for two or three weeks and died from starvation. The original cause of the trouble was an abscess in the mesenteric glands, which perforated into the abdomen. I made a post-mortem examination and removed a pailful of pus from the child's abdomen. The omentum and intestines were firmly glued together, with the exception of the peritoneal cavity, which was almost obliterated, and there was nothing but a hole in the drainage tube for anything to escape. Some of these cases of purulent peritonitis will have a tendency to cure themselves.

With reference to cases of fulminating gangrenous appendicitis, they all die. My own cases have all died, and, for that reason, when they come to me in what I call the second stage I do not operate. I do not think any of us can disagree with Dr. Carstensen that when a patient reaches the third stage, in which there is pus walled off, the right thing to do is to let the appendix alone. An operation done in the relapsing stage is not dangerous. I have never lost a case on which I have operated in the relapsing condition. As to immediate operation, advocated by Dr. Murphy, I consider it to be sound doctrine, but

here in Toronto, at any rate, we do not see these cases early enough. Dr. Murphy says when we see a man with classical symptoms of appendicitis we should operate at once, but here we do not see them when these symptoms present themselves.

DR. J. D. GRIFFITH, of Kansas City.—I would ask the gentlemen who have spoken, particularly Drs. Morris, Price, and Murphy, whether they have noticed that a catarrhal condition of the appendix produces a stricture. I have operated within the last six months on three cases for appendicular colic, not for suppurative appendicitis, and I have been able to demonstrate satisfactorily to myself that in at least two of the cases there was nothing beyond a stricture, except an enlargement of the canal. I could only pass a whalebone guide through the strictured portion. There was a marked thickening of the circular and longitudinal fibres of the appendix, showing that the circulation had been interfered with to such an extent that there was the commencement in one of the cases of an active ulcerative process. A collection of mucus beyond the stricture and its escape back toward the colon was the cause of the appendicular colic. It seems to me we have an easy way to account for some of these cases, as in the one cited by Dr. Reed, where there was no fecal matter but the orifice of the appendix was closed. We speak of closure of a stricture in the urethral canal, and why cannot the same thing occur in the Fallopian tubes? Why can we not account for the cutting off of the circulation in this way?

DR. M. HARTWIG, of Buffalo (by invitation), took a conservative stand with reference to appendicitis. While the preceding speakers had shown proof of the great danger attending this disease, still, if we take the average cases as they come to the general practitioner, appendicitis was not very fatal. German statistics

give about ninety per cent. of recoveries in cases not operated on. He admitted that we may have the relapsing form of the disease, and he has had five or six cases of this form occur in his practice. Dr. McDonald has done a good service by pointing out the difference between the operable and non-operable cases, as the speaker fully believes that such a distinction can be made.

DR. DONALD MACLEAN, of Detroit.—First of all I endorse heartily the doctrine that has been presented by Dr. Carstens—namely, that when you have appendicitis with adhesions fencing off the abdominal cavity and pus outside, you should open it as you would an ordinary abscess and wash it out. But not even the eloquence of Dr. Murphy, the logic of Dr. Price, or the experience of the members of this Association would induce me to break up the adhesions and enter the peritoneal cavity.

As to the question of early operation, If I had my patients entirely under my control in the hospital I certainly would advise and advocate early operative interference. Let us take, for example, a hundred cases in which an early operation is done for appendicitis, and I believe a great many of them would have recovered without an operation and permanently. I have had quite a number of cases under my observation and the opportunity of watching them. One was a coachman who had a severe acute attack of appendicitis, but was unwilling to have an operation performed. He got well without it. I have watched him ever since and he is well today. I could cite many other cases, if necessary.

DR. L. S. McMURTRY, of Louisville, Ky.—One cannot but recognize in the remarks of the several speakers the marked advance of knowledge in relation to appendicitis. Four or five years ago many eminent surgeons advocated expectant treatment in all

cases until general peritonitis was established, and inveighed against operative interference until the last moment. Now the course so forcibly advocated by Dr. Murphy and others in this discussion is generally conceded to be the only safe method of dealing with this disease.

Of the many important practical points discussed, I beg to direct attention to one in particular. It is to the importance of doing, in every case that will permit, a complete operation. We have learned the disastrous results of leaving behind diseased tissues and multiple pockets of pus in suppurative salpingitis, and the same principles should be applied in operating for appendicitis as in salpingitis. But in all cases where the patient's strength will permit, a thorough operation should be done. Adhesions should be separated, multiple posterior pockets of pus should be emptied, and the appendix removed with free flushing and drainage.

DR. W. G. MACDONALD, of Albany (in closing). — From what I have seen, the operative treatment of appendicitis has been largely confined, among a great many operators, to two classifications — cases of localized abscess with plastic peritonitis and cases of relapsing appendicitis. Of all cases of relapsing appendicitis upon which I have operated, every one of them has got on well, and of the other class of cases there is a morality of twenty-eight per cent. Five of these cases can be attributed to the breaking up of adhesions and establishing a communication between the general peritoneum and this area of the abdomen which has been suffering. I do not believe there is any system by means of which you can make it safe to turn this portion of infected peritoneum into the general peritoneum again, drainage or no drainage.

DR. JOSEPH HOFFMAN, of Philadelphia (in closing). — Why gonorrhoeal pus is less irritating than that

from the coccus which is supposed to inhabit the colon is beyond my understanding. It is only an effort on the part of some to explain what we cannot understand; and the explanation does not go far, for the reason that we can constantly open up these colonic abscesses and they get well. There is no reason why, if the coccus of the colon is more poisonous than any other, one patient should get well and another should not, if there has been an abscess opening into the peritoneum. A case was cited in point.

SECOND DAY—MORNING SESSION.

President ROHE in the chair.

DR. HENRY HOWITT, of Guelph, Ontario, read a paper entitled

REMARKS ON THE SURGICAL TREATMENT OF INTUSSUSCEPTION IN INFANTS, BASED ON TWO SUCCESSFUL CASES.

(See Annals, October, pp. 75.)

DR. ROBERT T. MORRIS, of New York, in connection with the above paper, demonstrated

A METHOD OF INTUSSUSCEPTION IN RABBITS.

The demonstration which I shall make will take but a few moments. It will show you the mechanism of one form of intussusception—viz., ileo intussusception. I do not know of what practical value it is, but we may suppose I shall produce this intussusception by touching the ileum with a bit of carbonate of sodium. We will suppose the ptomaines from decomposition of the intestinal contents may cause some spasm of the muscle in the infant. We know intestinal fermentation will cause convulsions in the child, and it is fair to assume sometimes that it may produce this form of intussusception which I now show you. When I touch the

bowel with carbonate of sodium, in twenty to forty seconds you will notice a sudden spasm of the circular fibres of the bowel. It will occur quickly, usually in twenty seconds, but in older rabbits it takes about forty seconds. Please notice now that the circular muscle is in a state of spasm and the calibre of the bowel is reduced very decidedly. [Here Dr. Morris conducted the experiment, and in about thirty seconds there was an intussusception of probably about two inches, it being limited only by the crowding of the mesentery in the intussusception.] The intussusception occurs steadily and quite regularly until the mesentery crowds.

DR. W. E. B. DAVIS, of Birmingham, Ala. — Referring to the paper read by Dr. Howitt, I think there is a good deal of difficulty frequently in diagnosing these cases in children. Appendicitis will often simulate invagination. If we can feel the tumor it will assist us very materially. It is difficult to examine the abdomen of a child unless we administer an anæsthetic. We must not be guided by the symptoms of bloody discharge and pain alone; they are not very reliable. We must feel the tumor. I believe invagination is a much rarer condition in young children than the older text-books taught.

As for Dr. Morris' experiment, it certainly opens up a field of much interest to us all. He has suggested that there may be some germs in the intestine that will bring about, under certain conditions, invagination in the manner described.

DR. M. ROSENWASSER, of Cleveland, Ohio. — Dr. Davis has just said that bloody discharge is not essential, but that a tumor is. About two weeks ago I saw a case in consultation in which a diagnosis of intussusception was made. The patient was a little older than the cases reported by Dr. Howitt; the child was about five years of age. The little girl had

had for two weeks colicky symptoms and straining at stool, with inability to pass stool. An evacuation took place from time to time. Sometimes the stools were a little solid and at other times fluid. I did not see the case at this time. Then, on Wednesday, the child began to vomit incessantly. On Thursday the bowels became obstructed. There was no distention of the abdomen, no fecal vomiting. The vomited material was purely a mixed fluid, and no passage of gas or stool. A surgeon was called to see the case on Thursday evening, and the child was brought to Cleveland on Friday. I saw the case on Saturday morning. The obstruction had lasted for three days. A tumor was felt in the region of the transverse colon, and there were only two symptoms lacking to make the picture complete — there was no bloody stool and no fecal vomiting, no abdominal distention, but otherwise the history of the case looked like a gradually increasing intussusception with finally complete obstruction. As the obstruction had existed for three days and the child was in collapse, almost pulseless, with extremities cold, I did not advise an operation but urged to get the child in better condition to withstand surgical interference by first giving hypodermic injections of strychnia and brandy per rectum. This was done, and on the following morning the pulse was better, with the tumor rapidly increasing, when a diagnosis of intussusception was made. Gangrene had already set in, and I therefore advised an operation, at which I assisted the surgeon. We found a gall bladder as big as my fist, full of gall, perfectly round. The intestines were collapsed and there was no sign of invagination. The gall bladder must have pressed upon the duodenum. There was no fecal vomiting, because pressure was too high up. The child died in a few hours. There was no

stone found in the gall bladder. This case simulated to a high degree one of intussusception where tumor was present but no bloody stool. The question arises whether or not bloody stool is essential to make a diagnosis, or whether fecal vomiting is one of the essential symptoms in these cases.

DR. HOWITT.—It appears to me Dr. Davis has misunderstood me. My paper was confined entirely to infants under one year of age. I believe, in the infant under this, that obstruction from any other cause than intussusception is extremely rare, and the exceptions are generally easily made out. The most important part of the diagnosis is the suddenness of the attack. It may come on during sleep; it generally comes on during perfect health, and there are symptoms of collapse.

In the case cited by Dr. Rosenwasser, I will say that bloody discharges are not essential to make the diagnosis; but they are frequent.

DR. FRANK A. GLASGOW, of St. Louis, Mo., read a paper entitled

TREATMENT OF DISTENTION OF THE FALLOPIAN TUBES WITHOUT LAPARATOMY AND REMOVAL.

A discussion then followed on

INFLAMMATORY DISEASE OF THE UTERUS AND APPENDAGES AND OF THE PELVIC PERITONEUM.

DR. GEORGE H. ROHE, of Catonsville, Md.—Conservative surgeons were very much shocked at first by the proposition to remove the uterus, together with the adnexa, in cases of inflammatory disease in the pelvis. However, the operation has won its way against opposition and must now be considered as an elective procedure in cases of extensive suppuration with adhesion, and especially in those cases, so numerous, in which the endometrium is likewise the seat of purulent inflammation. Gonorrhœal,

puerperal, or tubercular inflammations, and dense adhesions with displacement of the uterus, demand removal of this organ as well as of the appendages, if permanent good results are expected.

Total extirpation of the uterus and appendages by the vaginal method for pelvic suppuration was first done by Péan in 1886. Péan, Ségond, Doyen, Jacobs, and Landau have performed the operation upward of five hundred times, with an average mortality of less than five per cent.

The operation by the vagina is easier than abdominal extirpation, and, in the hands of most surgeons who have performed it, is attended by less shock. It leaves the parts in condition for perfect drainage. The after-treatment is simple. Patients may sit up in a week or ten days. Forceps are preferred to the ligature for hemostasis.

DR. A. H. CORDIER, of Kansas City, Mo., read a paper on

HYDROSALPINX.

Articles by the so-called conservative writers have, in the last few months, appeared in journals all over the country, in which the aspiration or catheterization of Fallopian tubes filled with liquid of any character has been advocated as a procedure of relief and cure. Such articles have engendered a retrograde tendency on the part of many, and it is sure to be at the expense of an increased mortality from subsequent operative procedures to cure these cases after abandoning the unsurgical and uncertain tinkering.

A desire to assist in correcting these false theories and aid in establishing the truth has prompted the author to write this short article, giving his personal experience and observation in that class of cases.

Hydrosalpinx has been looked upon as the least hazardous of all inflammatory results to the Fallopian tubes.

The writer claimed that hydrosalpinx was, in the majority of instances, a sequel, to some old inflammatory disease of the tubes (pyosalpinx), an offspring of a virulent process that had wrought permanent and irreparable injury to the delicate structures of the tubes. There exists no microscopical appearances of the affected tubes or their contents to indicate whether or not the transition from a virulent to an innocent (so-called) condition has been completed. A true dropsical condition of the tubes is found occasionally.

The writer said he did not consider hydrosalpinx as a retention cyst. Cases of hydrosalpinx that have a mild history, and a few inflammatory bands discovered at the time of operation, were probably due to a catarrhal salpingitis, tubular salpingitis, or a subinvolved tube following a septic "getting up" after a full-term labor or a miscarriage.

Cases of hydrosalpinx are rarely diagnosed prior to operation. A digital examination of one of these cases causes less pain than is produced in examining a pyosalpinx. Adhesions, as a rule, are less firm and the uterus is more movable than in a pyosalpinx, but he said that we never see an acute case of hydrosalpinx. Many cases had their origin in a bad "getting up" from childbirth. All the writer's cases had been in married women, and all had given birth to one or more children, and in each case a period of sterility extending over from two to eighteen years. Gushes of water from the vagina are not of necessity diagnostic of hydrosalpinx, yet such do undoubtedly take place. A hydrosalpinx may, by a rupture, be symptomatically cured, but no surgeon will recommend such a procedure. The knowledge of the possibility of a rupture should make an operative procedure for their safe removal imperative. The microscope and culture tubes are the only means

of classifying the character of the fluid in these cases. The ovaries are not so often injured in these cases as in the more acutely virulent purulent cases.

Where hydro succeeds a pyosalpinx, the latter very likely had a mild beginning and a slow course.

Hydrosalpinx had been a complication of uterine fibroids in two or three of the writer's abdominal hysterectomies for the removal of these neoplasms. He had seen a pyosalpinx on one side and a hydrosalpinx on the other.

A twisted pedicle of a hydrosalpinx had caused death in more than one case reported.

These watery filled tubes may rupture as a result of a rapid menstrual distention, admitting that the tubes are menstruating organs, as is claimed by some.

A hemorrhage had in one case been caused by the rupture of a hydrosalpinx, nearly proved fatal, and was diagnosed as an extrauterine pregnancy prior to operation.

In one case occurring in the essayist's practice the uterine extremity of the tube was largely dilated and filled with a clear fluid, while in the ampulla there existed a collection of pus, separated from the clear fluid by a closed stricture.

DR. ROBERT T. MORRIS, of New York, then read a paper entitled

THE REASON WHY PATIENTS RECOVER FROM TUBERCULOSIS OF THE PERITONEUM AFTER OPERATION.

He stated that he had been experimenting with a view to determine the reason for the cure of tuberculosis of the peritoneum after operation, it being well known that more than eighty per cent. of these cases recover as a result of simply exposing the peritoneal cavity to the air. Dr. Morris collected fluid from the abdominal cavity of patients with tuberculosis of

the peritoneum, placed it in an incubator for forty-eight hours, and developed the bacteria of putrefaction which would ordinarily enter in such fluid exposed to the air. From this fluid Dr. Eiloart then isolated a toxalbumin, the product of the growth of putrefactive bacteria in this peritoneal fluid. The toxalbumin employed to destroy tubercular bacilli in culture tubes destroyed them very promptly. A control experiment, which was not yet completed, was in progress for determining if these bacteria were absolutely dead. However, enough had been proven to show that tuberculosis of the peritoneum recovers after operation because putrefactive bacteria produce a toxalbumin in the fluid which is fatal to tubercle bacilli in the peritoneum. The reason why it is more effective in curing cases of tuberculosis of the peritoneum than tuberculosis of the knee joint, is because the lymphatic anatomy of the peritoneum is such that any toxic agent absorbed by the lymphatics of the peritoneum is brought into close contact with the entire structure, whereas in the knee joint the lymphatics are fewer and with more definite channels.

Dr. Morris was asked the question as to whether we should leave

some of this fluid in tuberculosis of the peritoneum, and whether we should drain it completely under aseptic methods. He answered the question in this way: that cases in which he did the most perfect aseptic operation were cases which did not recover from tuberculosis of the peritoneum after operation. The cases in which he had used drainage and had allowed the saprophytes or putrefactive bacteria to enter through the drainage opening were cases which recovered promptly.

DR. I. S. STONE, of Washington, D. C., asked how he could explain the disappearance of certain tumors.

DR. MORRIS replied that certain tumors are microbic in origin, or by analogy we believe them to be, and it is probable that the tumors whose microbes are killed by the toxalbumins are the ones which disappear after opening the abdominal cavity.

DR. HAYD, of Buffalo, asked why these bacteria developing in the peritoneal fluid would not be injurious to the patient. And Dr. Morris replied that the peritoneum was capable of disposing of toxic products in most instances.

The Association then adjourned until 8 P. M.

(To be continued.)

Philadelphia Obstetrical Society, December 6, 1894.

ABSTRACT.

DR. R. H. HAMILL in the chair.

AUTO-INFECTION IN THE PUERPERA. BY DR. THOMAS D. DUNN.

THE cause of puerperal disease is the organisms which cause suppuration elsewhere. The streptococcus is usually present in the severe forms. The staphylococcus may also cause

infection. The organisms of putrefaction may, by the absorption of ptomaines, cause the affection called sapræmia. It has also been held that these affections are due to the gonococci. In four cases coming under the author's observation where there had been pain, fever and mucopurulent discharge, he had suspected

that the cause of the affection was the gonococcus; and this suspicion was strengthened by the presence of gonorrhœa in the husband, although no search was made for the gonococcus. A review of the literature shows that a variety of organisms may produce puerperal infection, and that in the majority of cases they are carried into the genital tract on the hands of the accoucheur.

One of the most important questions is, "Is this the only cause of infection, or may infection come from organisms present in the genital canal previously?" It is believed that in a small percentage of cases, pathogenic germs may have been introduced into the birth canal during pregnancy and have remained in a latent state until labor, when they are absorbed into wounds that may have been produced, causing a septic process, this being simply a variety of external infection.

Careful investigations have shown the presence of pathogenic organisms in the birth canal in a positive percentage of cases not previously examined. The frequency with which this is the case is, however, so out of proportion with the cases of child-bed fever, that other conditions favoring the development of the affection must be looked for. These facts would seem to indicate that pathogenic organisms do not play as important a part as we should expect from the bacteriological examination. But this is the same as is seen by the surgeon, — the mere presence of germs does not necessarily mean a septic wound. It is probable that certain conditions with which we are not familiar are necessary for the production of infection. The mechanism of labor with the gush of water, the passage of the child's head and the delivery of the placenta are admirably adapted to clean the genital tract. A study of the statistics shows that the use of one ante and one post-

partum douche is not harmful, but the use of external antiseptics is of much greater importance.

THE MORBID CHANGES IN THE PUERPERAL ENDOMETRIUM DUE TO SEPTIC INFECTION, AND THEIR RELATION TO THE GENERAL SYMPTOMS.
BY DR. W. REYNOLDS WILSON.

The modern treatment of early infection in the puerperal state illustrates the theory of its causation.

The point of attack is proven to be the endometrium by the efficacy of local treatment in removing the general symptoms. There are two primary forms of septic puerperal infection, the putrid and the septic. The putrid form of endometritis occurs in two forms. First, the localized, in which a granulation zone is formed, preventing the passage of germs; and, second, the form in which the granulation zone is absent, and we have septic endometritis with general infection. The infection may occur through the lymphatic system or through the veins.

While putrefactive germs may be present in septic endometritis, they do not predominate and foetid local discharge usually does not accompany the more active septic processes. The active causes in septic endometritis are usually the streptococcus pyogenes aureus, the staphylococcus aureus and albus and the streptococcus of erysipelas. These attack the placental site and points of denudation about the cervical canal. Infections of wounds about the vulva and vagina are less likely to communicate the disease to the general system on account of the less active development of the lymphatics in these regions.

The causes which predispose to local infection are early local changes due to forming endometritis, and secondly the constitutional condition of the patient.

The symptoms of local infection are abdominal tenderness and sub-involution. The general symptoms are those of a mild irritative fever. There is often a roseolous eruption over the face and neck, and foetid lochia. In acute infection with active lymphatic absorption there are present symptoms of peritonitis and the symptoms produced by the absorption of germs and their products.

In necrotic endometritis the symptoms are those classed under the head of sapræmia. In the broadest sense, the cause is the retention of putrid materials within the uterus. There is a general necrotic condition of the endometrium or a necrosis localized to the placental site.

Infection into the lymph channels may occur through the placental site, or the micro-organisms may enter through lacerations in the cervix and lower segment of the uterus.

In sapræmia the morbid manifestations are those of a toxæmia, and they may be of a mild or grave form. It is important to note that putrid changes at the seat of infection may have an important bearing on the spread of infection, rendering the septic germs more active. The saprophytes may render the individual more susceptible to infection by other bacteria.

PUERPERAL SAPRÆMIA. BY DR. E. P. DAVIS.

The parturient patient is exposed not only to poisoning by infective germs but also by certain toxines which accompany the process of putrefaction. Injuries occurring during labor place the tissues in a favorable position for infection, while foetal death places in the body of the patient a mass of tissue ready to putrefy, and offering favorable conditions for the growth of germs. The causes of sapræmia are those which produce necrosis of tissue and introduce into

this infecting germs. The fate of the germs will depend in part on the blood serum. In some cases, the bacteria grow rapidly and abscesses promptly follows. In other cases, the germs fail to increase rapidly. The products secreted by these bacteria constitute toxines. Sapræmia is most often observed after tedious labor, where injury to the soft parts has taken place. Observation has shown that absorption begins about ten hours after labor. In some cases, hæmorrhage by impoverishing the blood, renders the patient peculiarly susceptible to septic absorption.

The clinical signs of sapræmia are foul discharge, fever, rapid pulse, and, usually, tenderness over the uterus. In severe cases there may be rigors and delirium. A comparatively sudden onset with rapid pulse give evidence of a toxæmic poison rather than a gradual development of bacteria. Pathogenic germs present in the tract after labor find favorable food in the putrefactive material present.

Differential diagnosis of sapræmia, septicæmia and pyæmia: In sapræmia, the symptoms are those of an absorption toxæmia. In a septicæmia the absorption is more gradual and the course of the case is more gradual, the fever showing remissions. In pyæmia the symptoms of septicæmia are increased by the symptoms of abscess formation.

Treatment of Sapræmia. As the retained decomposing tissue, from which are absorbed the toxines, is in the birth canal, the first step is to empty and cleanse this region. For this purpose the intra-uterine douche curette is of service. The curette should be large and its edge not sharper than that of a paper cutter. No attempt should be made to remove the granulation tissue beneath. Antiseptic solutions, preferable one of the phenols, are of service. There is no necessity for the uterine catheter in these cases. After using the

curette we should pack with iodoform gauze, or use a suppository containing iodoform or boric acid. If the disinfection is thoroughly done it is rarely necessary to repeat it. If there is evidence of further absorption, the treatment should be renewed. Saline purgation may also be employed to relieve the pelvic lymphatics.

Sapraemia may seriously complicate labor where parturition is prolonged, and may offer an indication for speedy delivery, this being called for both in the interests of the mother and child, as the foetal mortality is increased by the occurrence of sapraemia during labor. In these cases it is well to deliver with the least possible risk of injury. There is increased risk from symphyseotomy under these circumstances. In highly contracted pelvis where sapraemia is present, the child should be delivered by abdominal section rather than through the vagina.

When proper treatment is instituted, the chances of the patient are but little imperiled by the complication. When a patient is allowed to remain in impossible labor, the mortality rate is high.

PUERPERAL CELLULITIS AND PUERPERAL PERITONITIS. BY DR. CHARLES P. NOBLE.

The author has made these affections the subject of a collective investigation through correspondence with over thirty eminent gynecologists.

On April 5, 1894, the author had reported five cases of puerperal cellulitis and true pelvic abscess, verified by abdominal section. To these he was able now to add eleven others in the hands of competent men. In these cases the uterine appendages were entirely normal or only slightly diseased. His correspondents also referred to numerous other cases in which the affection was supposed to be of this character, but the diagnosis

was not confirmed by abdominal section as the patients recovered without operation, or the abscess was opened directly. These studies bear out the opinion that pelvic cellulitis and true pelvic abscess are met with in the puerperal state and are surgical curiosities in the non-puerperal woman. His treatment in cases of this kind has been to open the abdomen to determine whether or not the uterine appendages were involved, and if pus were present to evacuate it by a second incision.

The author then considered puerperal peritonitis: first, as a complication of lymphangitis and cellulitis; second, as due to the injury of pelvic tumors in labor; and, third, as due to the bruising or rupture of pus sacs and other accumulations in the appendages existing prior to labor.

The first class of cases is more fatal than any others. In these cases the septic element predominates over the peritonitis and local pelvic inflammation. The case usually terminates fatally in a week or ten days. If surgery is to be of service in these cases, it must be prompt while the trouble is limited to the uterus and vagina. By the curette and douche the infective process may be cut short. If the disease is advanced and the uterus is thoroughly infected and the infection is spreading, perhaps the radical operation of hysterectomy may save a certain number. Prevention of infection and vigorous treatment of puerperal sepsis offers the only rational means of preventing death from this variety of peritonitis.

In cases of peritonitis due to the bruising of tumors during labor, operations offer more for the cure of the case than in any other variety of peritonitis.

Peritonitis from the rupture or bruising of pus tubes or other accumulation in the appendages is not common because women with these conditions are usually sterile. The

proper treatment in these cases is prompt operation, irrigation and drainage.

**REMOVAL OF THE UTERUS AND AD-
NEXA FOR PUERPERAL SEPSIS. BY
DR. J. M. BALDY.**

In 1887 the author had done abdominal section removing the adherent ovaries and distended pus tubes in a puerperal woman suffering from sepsis. The patient made a prompt recovery. This is the first case of this kind of which he had knowledge. He advocated that, where the ovary or tube is found distended with pus in the puerperal woman, the distended organ should at once be removed.

In the large class of cases where infection of the Fallopian tube and ovary has occurred and possibly of the peritoneum without the formation of pus, the treatment is to be determined by two conditions, 1, the general condition of the patient and 2, the ability of the physician to determine, whether or not, suppuration has occurred. In general it is safe to say that in any attack of puerperal salpingitis and puerperal peritonitis, no pus being present, immediate operation is not demanded. In those cases in which it is doubtful whether or not pus is present, and the general condition permitting, he would prefer to delay, watching the patient and operating later on if necessary.

There is another class of cases in which the patient suffers from puerperal fever without local signs of pelvic trouble. A certain number of these patients will inevitably die, unless the source of absorption is cut off. The only proper procedure in these cases is the removal of the uterus, thus stopping the absorption of sepsis, and unless sufficient has already been absorbed to disorganize the blood the patient stands a chance of recovery. The success will depend directly on the period of the disease

at which the operation is performed. The earlier the operation the greater the likelihood of a successful result. The author, however, believed that in the vast majority of septic cases seen in time, dangerous complications can be avoided by thorough curetting, irrigation and antiseptic packing.

Conclusions: Patients suffering with puerperal septicæmia with pus in the appendages should be submitted to abdominal section. If the disease is limited to one organ, only the affected organ should be removed. If it becomes necessary to remove both appendages, the general condition permitting, the uterus should be removed at the same time.

In cases of septicæmia where suppuration has not taken place, the general condition not contra-indicating, we should wait for the subsequent occurrence of symptoms.

Patients suffering from puerperal septicæmia from the absorption of septic matters through the uterus whose lives are seriously threatened, will in carefully selected cases demand early abdominal section.

**INFECTION OF THE URINARY TRACT
AND BLADDER AFTER LABOR. BY
DR. R. C. NORRIS.**

Infection of the urinary tract is not uncommon, and it may be of the ascending variety, beginning in the bladder or adjacent structures and extending to the ureter and kidneys; or of the descending variety, beginning primarily in the kidneys and passing to the ureter and bladder secondarily. The infecting poison may gain access in different ways, but usually by the catheter not being clean or by a clean catheter becoming contaminated by coming in contact with the lochial discharge. The healthy bladder can resist the action of bacteria, but in the puerperium this normal condition is not present on account of the contusions received by

the bladder during labor. It has also been found that micro-organisms, in other of the pelvic viscera, may find their way into and infect the bladder. It is easy to understand how the kidneys may become infected by continuity of structure. The time required for the spread of infection from the bladder to the kidneys is usually ten days to two weeks.

The symptoms of septic puerperal cystitis are those of cystitis under other circumstances. The fever of cystitis generally passes over in a few days. Where the gradual depression of the temperature curve is followed by secondary rise accompanied by tenderness over the kidney, the diagnosis of secondary infection of the kidney is made out. In all cases of puerperal sepsis it is desirable that frequent examinations of the urine be made in order to detect the occurrence of ascending or descending nephritis which may insidiously develop.

The prognosis of septic cystitis is favorable if proper treatment is begun early. The most important element in the treatment is the prevention. The use of the catheter should be delayed as long as possible. The danger of over-distension must also be borne in mind, for the traumatism resulting therefrom renders the bladder more susceptible to the influence of septic organisms. If the bladder is not evacuated within twelve hours, a clean catheter should be passed visually, with antiseptic cleansing. When cystitis develops, irrigation of the bladder should be employed at intervals of four hours, some mild antiseptic being employed, as creolin one-half per cent., or boric acid, fifteen grains to the ounce. Warm applications over the bladder and diluent drinks in connection with irrigation will usually check the cystitis in a few days.

With regard to infection of the rectum, the speaker said that the

complication was a very rare one, but few cases being on record.

SEPTIC PHLEBITIS IN THE PUERPERA. BY DR. BARTON COOKE HIRST.

Of all the forms that sepsis can present, phlebitis is the least understood, the most often mistaken and most frequently maltreated. The most misleading features of the affection are the late appearance of the symptoms and the entire absence of local and physical signs of inflammation. It may develop as late as five weeks after labor. There is an absence of local signs, while the general symptoms may be most marked. The disease usually begins ten days or more after confinement. The temperature may show a decided rise in twenty-four or forty-eight hours. The pulse is rapid, out of proportion to the temperature. There is distinct flushing of the face and patches of red may appear on other parts of the body, particularly the chest. The patient may not complain of feeling ill. The disease runs a tedious course. It may continue for from three weeks to four months. Another distinctive feature is the tendency to complete remissions of the fever and other symptoms for more than a week at a time. Then there is a recurrence of the symptoms with the former intensity.

The commonest complication of phlebitis is phlegmasia, but many cases run their course without swelling of the legs. Thrombosis is another complication, and it is not necessarily confined to the veins of the lower extremity. The longitudinal sinus and other large veins far distant may be involved. Another complication is metastatic septic inflammation anywhere in the body. Again, there may be repeated hæmorrhages from the veins of the placental site.

The treatment consists in abstinence from local interference and the freest possible use of stimulants and food. Any attempt at local disinfection will make the patient worse. The use of injections may cause a rapid rise of temperature. This is often a valuable differential, diagnostic sign. In view of the possible presence of sapræmia, one thorough local disinfection should be practised.

Prognosis: The disease should end in recovery in the great majority of cases.

Dr. Egbert Grandin, of New York, was expected to be present, but was unavoidably detained. He sent a paper giving his views, of which the following is an abstract:—

The subject of puerperal septicæmia may be simplified by the statement, that the disease is due to lack of cleanliness on the part of some one of the attendants of the parturient female. An aseptic technique on the part of all coming in contact with the puerpera means an afebrile and uncomplicated convalescence. Auto-infection is a myth unless we are pleased to so denominate puerperal sapræmia. The truth of this view is shown by the practical obliteration of septicaemia from the practice of all who pay strict attention to the laws of surgical cleanliness.

The vast majority of cases of puerperal sepsis originate in that portion of the genital tract which is accessible to local therapeutics; hence the necessity for careful repair of all lesions immediately after the completion of labor in order to close the avenues of entrance of septic material.

Puerperal cellulitis is a possibility, although its occurrence is a rarity. Puerperal peritonitis is usually an epiphenomenon of septic endometritis. The treatment of puerperal peritonitis may be said to consist in its prevention. On the first signs of local sepsis, the genital tract should

be thoroughly cleansed. Many a septic tube and ovary may be saved by early radical treatment of the lower genital tract. If, however, the tubes, ovaries and peritoneum become involved, there is great danger of the development of general septicæmia and death. If there is any treatment for these complications, it is the extirpation of the tubes, ovaries and uterus, but this must be resorted to early. Septic salpingo-oöphoritis in the puerperal state necessarily means septic metritis. If operation is resorted to early, the patient has a chance of recovery, but if the peritoneal cavity has become infected and filled with multiple abscesses, the best that we can do is to extirpate tubes, ovaries and uterus, open every pus sac and drain, but no matter how radical we may aim at being, the great majority of these cases will terminate fatally.

DUPLICATE OF DISCUSSION.

Dr. H. H. Hamill in the chair.

Paper of Dr. Dun.

Paper of Dr. Wilson.

Paper of Dr. Davis.

Paper of Dr. Noble.

Paper of Dr. Baldy.

Paper of Dr. Norris.

Paper of Dr. Hirst.

Paper of Dr. Grandin, of New York.

DR. J. WHITBRIDGE WILLIAMS, OF BALTIMORE.—As some of you know, I have taken more or less interest in the question of puerperal infection, particularly from an etiological standpoint. During the past eighteen months my work has been unavoidably interrupted but I expect to continue it and hope soon to bring forth some material which may go toward solving the interesting problem as to the etiology of puerperal sepsis.

As was said by the first speaker, puerperal sepsis is undoubtedly due

to a number of micro-organisms. The most frequent cause is the streptococcus pyogenes, that is the organism which causes puerperal infection in the vast majority of cases. Then there are cases caused by the staphylococcus aureus and possibly other forms. These cases are comparatively rare and are usually of moderate severity. Then we also have cases of gonococcus infection, nearly all of moderate severity. As far as I know none of these cases have died. We have other cases due to the colon bacillus. One Berlin observer found in seven cases a pure culture of the colon bacillus. Eisennart and Kronig have also had to do with the colon bacillus. Several French observers have also met with it. There is no doubt that other organisms take part in the puerperal infection.

My own work has been conducted in rather a different line. I was interested in the work of Derelin on the vaginal secretions and undertook some work to see if my results would correspond with his. It is only necessary to say that my results did correspond very closely with his, and in my article I had no hesitation in saying that his conclusions were absolutely justified. When in Leipsic, last winter, I found that Derelin's place had been taken by Kronig and Maman. These two men have taken up the same line of work and have arrived at diametrically opposite conclusions.

Derelin divided his cases into those with a normal discharge, which constituted the majority, and those with pathological discharge. In a certain number of the latter he found pathogenic streptococci, and from this he stated that it was possible to have infection of the woman without the introduction of new organisms. My results confirmed those of Derelin. The two men who have followed him in Leipsic say that they can find no pathogenic organisms except the gon-

occus. It is difficult to account for this difference in results. Derelin's work was conducted with care and I have watched the work of the other men and can detect no flaw. It may be that the material which they use is not suitable for the growth of streptococci. I hope, however, to have the opportunity of going over the subject again and seeing what the result will be. I believe, however, that my results show that in a certain number of women we can find in the vagina a certain number of pathogenic organisms as the streptococcus, staphylococcus and gonococcus. The question then is, do these things give rise to puerperal infection. This must be answered in the negative. The great majority of women will not have puerperal infection, although many will have the organism present. Something else is required beyond the presence of the organism. We have the possibility of infection, but for practical purposes it does not occur. When we do any operation we necessarily introduce many organisms, but we do not infect the wound. I think that while infection is theoretically possible and occasionally may occur in this way, yet that in the vast majority of cases when infection does occur it has been brought from without by the physician or attendants. This view appears to be borne out by the results obtained in the best lying-in hospitals. Maman who does not believe in auto-infection but in subjective antisepsis, reports thirteen hundred cases. Only three per cent. of these had a temperature above 100°; he has lost no case from sepsis contracted in the hospital. Only one woman died and she had sepsis when admitted. I think that such results show that practically we have very little auto-infection.

When we come to the practical management of labor cases, I believe absolutely in subjective antisepsis.

I do not believe in vaginal douche. The general practitioner is liable to do far more harm than good with it. In hospital practice, however, I do not think that we do our duty unless we differentiate the cases from a bacteriological standpoint and douche those cases with abnormal secretion. Where the secretion is pathological there may be a chance of auto-infection, and those cases we should douche, but in private practice I condemn douching.

I should like to say a word in regard to the treatment of puerperal fever. I do not know that there is as much sapræmia as is generally believed, but I think that a considerable number of these cases are instances of mild septic infection. In

such cases all that is necessary is to clean out the uterus and wash it out. I think that it makes no difference whether we use bichloride or carbolic acid solution or simply boiled water, as the fluid acts mechanically and we cannot use enough of the antiseptic to do any good unless we resort to continuous irrigation.

To sum up my view on the subject, I would say that I believe that auto-infection is possible, but that we do not have to reckon with it. I believe in the most rigid subjective antiseptics, but I do not believe in vaginal douches in general practice. In hospital practice, where we differentiate our cases, douching has its uses.

Adjourned.

Transactions of the Detroit Gynæcological Society, November 7, 1894.

DISCUSSION—PELVIC INFLAMMATIONS.

The President, E. T. TAPPEY, M. D., in the chair.

ÆTIOLOGY.

DR. TAPPEY. — The most frequent cause of pelvic inflammation is what has been spoken of so much in this society and others, namely, gonorrhœa. The inflammation caused by the virus starting, usually, in the vagina, and extending through the uterus and Fallopian tubes to the ovaries. The next factor of importance in the causation is the various infections that take place at childbirth. A third factor is tuberculosis, which affects the pelvic organs as it does almost all the organs of the abdomen, by setting up a low grade chronic inflammatory condition, and sometimes the formation of abscesses.

Besides these, one may have inflammations caused by the extension of inflammations from abdominal organs, as, for example, appendicitis. Briefly, these factors, to which I should probably add traumatism, seem to me to be the chief causes of pelvic inflammations.

DIAGNOSIS AND SYMPTOMS.

DR. LONGYEAR. — I feel a little embarrassed at telling these learned gynæcologists and surgeons the symptoms and methods of diagnosing pelvic inflammations; but, as our president has assigned this part of the discussion to me, I will endeavor to do so, noting the salient points of my subject only, however, as the time at my disposal is insufficient for me

to do complete justice to it in all its details.

I shall first consider the symptoms. The title of the discussion is rather broad, and may cover any structures in the pelvic cavity; but to simplify matters I shall speak mostly on the inflammation of the uterus and appendages, and peritoneum of the pelvic cavity. The symptoms of acute inflammation of these organs, which we shall consider first, generally begin with pain in the uterus. When it is infectious—and nine-tenths of these cases are—the pain begins in the uterine endometrium, and passes upwards. This pain is generally located by the patient in the back of the pelvis and across the middle and lower part of the abdomen, sometimes running down the inside of the thighs, and is increased by motion. There is often some disturbance of micturition, but that usually comes later, and, as a rule, there is no febrile action at first. The pain gradually ascends and reaches out into the pelvic cavity on each side, and tenderness on pressure begins to be manifest. It may advance into one side only, and that side is usually the left, observing the same rule as in diseases of the testicles of the male. This tenderness increases as the disease advances, and comes to be at last very acute. The patient will not have chills or fever at first, but as the disease advances and invades the Fallopian tubes, and especially if pus forms, chills and rise of temperature occur. On examining by the vagina the cervix is found to be very hard and sensitive, and if the disease has just commenced, there will not be much tumefaction around it, but later you will find that the uterus becomes somewhat fixed, and the broad ligament on the side on which the inflammation is most severe will be found to be thick and œdematous. The tissues have become filled with serum, which causes this

stiff condition of the vaginal vault, feeling as though made of pack board. The whole vault of the vagina will sometimes be found to be solid. This condition dissolves to a certain extent after a few days, so that you can map out the organs with more ease. The uterus is still rather immovable, and by bimanual palpation you can find the enlarged tube and distinguish the separation between the tube and the uterus.

In the beginning of these attacks you are often in doubt as to the seat of the trouble, and when it is necessary to settle the diagnosis at once, give an anæsthetic, as the extreme sensitiveness often makes an examination otherwise impossible.

As the disease progresses resolution may take place without pus forming for you do have fever without pus; there may be only an exudation of serum. Where no pus is contained in the Fallopian tube after such an attack, it feels like a large cord, and the distinct elongated tumor can be made out lying next the uterus and running off to the ovary. This acute inflammation may run on a week or ten days, and where pus does not form, the less active symptoms will last from three to six weeks more. Where pus forms there are always chills and fever and more or less local peritonitis, which produces adhesions of the parts, and sometimes this pus ruptures through the fimbriated extremity, and you have a pelvic abscess, which is separate from the tube, the pus lying on the peritoneum, and walled off from the abdomen by adhesions. The symptoms of this would be a sudden exacerbation of pain, chills, and rise of temperature. General peritonitis would be caused by escape of pus through the adhesions into the abdominal cavity, and can be excluded by the symptoms. This pus may be evacuated by the surgeon's knife, or it may evacuate itself through the vagina

or rectum, in which latter case we should have preceding symptoms of tenesmus and diarrhoea. If through the vagina the only symptoms would be the pus coming through, although the pointing of the abscess can be located before. There is another symptom in the beginning, and that is the colicky pain which is quite characteristic. This pain is called a tubal pain, although it is undoubtedly uterine. The pain is more marked where there is a discharge from the tube through the uterus. These pains I think are due to this discharge passing into the inflamed uterus, and its presence, with the stenosis of the inner os, causing the contraction, as in one case I made the experiment of putting a drain of silver wire into the flexed uterus, and this relieved the pain.

This description would fit a pelvic inflammation coming from gonorrhoeal poison, as it would one also caused by the streptococcus or staphylococcus. You may also have abscess of the tubes produced by tubercular deposit. In these cases the symptoms will not begin in the uterus, but in the ovary and tube, which are first attacked, and abscess will form. This condition is sometimes found in young girls, and the diagnosis is often extremely difficult. It is said that in these cases you will usually find deposits in the lungs, but I have rarely found this so. The inflammation resulting from infection at the time of childbirth may be somewhat different, and you may have a nearer approach to the pelvic cellulitis and abscess, which used to be supposed to exist where pyosalpinx was present. After childbirth, when infection occurs, the uterus often takes on an acute inflammation with resulting abscesses in its walls, and the pus which forms often passes to the broad ligaments. These cases generally go rapidly, and the patients either succumb to the activity of the inflam-

mation, or the pus is evacuated, either by the surgeon's knife or spontaneously, through the rectum or vagina, or the abscess may point in the groin.

There are a few diseases only which you need to differentiate. One of these is neuralgia of the ovary, which is very often confounded with a true pelvic inflammation. I do not think there is any excuse for this mistake, for examination will always show the difference. In neuralgia of the ovary you have those peculiar hysterical symptoms coming from reflex action, and there is no tumefaction or any of the physical signs of inflammation. Those I have enumerated. I think it is very essential to make a differential diagnosis, because the neuralgia can often be successfully treated medically instead of surgically, while it would be a crime to remove a healthy ovary. Another trouble that may be mistaken for pelvic inflammation is abdomino-lumbar neuralgia of the surface. In that case the pain is located apparently in the region of the ovary. Examination again will show the difference, the tenderness being external, and the ovary and tube free from the signs of inflammation. I would recommend that, in making the physical diagnosis of inflammation of the pelvic organs, the examination be made with the patient in the dorsal position. The thighs should be flexed and rotated outward, so as to put the psoas muscles on the stretch, thus marking the boundaries of the pelvic cavity more plainly. With the patient in this position, and the use of bimanual palpation, the diagnosis should be made.

TREATMENT.

DR. CARSTENS.—The question of treatment is, of course, a very plain and simple one. It resolves itself into two kinds,—the preventive and the

curative. The preventive, it seems to me, is the principal one. Having had our attention called to gonorrhœa as a cause, the great thing is to prevent the gonococci from getting into the Fallopian tubes. These cases generally come into the hands of the general practitioner and the treatment should be most thorough and systematic. This cannot be done by merely giving a little wash and injection. You must use the speculum and thoroughly clean the vagina with some germicide, and be sure to clean out the cervical canal. By this thorough treatment you prevent the formation of gonorrhœal pus tubes. The other factor is puerperal infection, sometimes after labor, but generally after miscarriage, and due to the streptococcus and staphylococcus; the fault dirty fingers and instruments, and trusting too much to the *vis medicatrix naturæ*. The germs find a most fruitful soil for development and get up into the tubes, simply because, following a simple case of miscarriage, the woman has not been properly treated. The uterus should be thoroughly cleaned as soon as you are called to the case. Give an anæsthetic and dilate the uterus and thoroughly clean and disinfect it. Swab it out with strong carbolic acid, which does not hurt a particle, and the uterus will contract and there will be no trouble. You must, if possible, dilate the uterus and get your finger in, especially if the case is of some time standing. If the general practitioner would take care, the occupation of the abdominal surgeon would be practically gone. We have another class of cases, in young girls who ride bicycles and are run into and knocked over, servant girls who fall down stairs,—these dislocate their ovaries and uterus. The uterus becomes congested, which is the first stage of inflammation; then comes œdema of the submucous tissues and hypersecretion, and a good soil is

formed for the developement of germs. If we can take these cases early and if we can put false modesty aside, give an anæsthetic and make a thorough examination and introduce a properly fitting pessary, these cases could be cured, but they are neglected. The treatment is on general principles, hot douches, etc., and finally they come to me. The treatment has been correct as far as it goes, but it has had no effect. Shall I repeat all this treatment? No! all I can do is to remove the diseased pus sack. In other cases, as Dr. Longyear says, they are sick four, six or eight weeks when I am called to see them. What shall I do,—build them up? The physician in attendance has been trying to build them up with tonics and proper food, but they are gradually getting worse, there is absorption of pus and every day they become more splenænic. Shall I wait? No! I must operate right away and I know these cases are desperate cases; some will virtually die, on the table, but it is the only chance. Probably one out of four or five die, but if I waited another week or two they would die of general debility. As we have to-day a much better knowledge of the causation of this trouble it makes the treatment much more simple than it used to be. Sometimes the tube becomes obliterated by itself and the patient gets well with a little simple treatment, but these cases are very rare. After all reasonable treatment has been tried there is only one thing to do and that is to remove the organs. The point I particularly wish to make is that in the great majority of cases the general practitioner can prevent the trouble, but when it does exist the sooner the operation is done the better and the results we get are sometimes simply wonderful; but sometimes they are so far run down when they come for operation that all hope of recovery is doomed to disappointment. When a woman is hyster-

ical and undergoes such an operation she will be neurotic just the same. I think we get better results in elderly than in young women, but in any case we must not promise too much.

DR. HELEN WARNER.—I would like to ask Dr. Longyear and Dr. Carstens if they think all cases of pelvic inflammation are either septic, gonorrhœal or tubercular.

DR. CARSTENS.—Nearly all, but there are exceptional cases, as the traumatic, which I mentioned.

DR. WARNER.—I have seen many cases where there was no traumatism and gonorrhœa was out of the question, yet where there was severe inflammation with suppuration. All recovered, some perfectly. It seems out of the question that they were tubercular as they showed no symptoms.

DR. CARSTENS.—We have tubercular salpingitis in only a small proportion of cases, but we have some cases where the infection is simply from the staphylococcus, which is the most benign of germs, and in these cases we may get a discharge of pus into the vagina or rectum, and as soon as drainage is established the cavity heals up. It is simply due to cervical endometritis.

DR. LONGYEAR.—There is one fact I want to put on record. I have never operated for the removal of a pus tube where I could positively exclude gonorrhœa or tubercular disease as the origin.

DR. WARNER.—I had a case once where there was undoubtedly a pus tube in a young girl where the hymen was intact and where there was a condition of vaginismus from hæmorrhoids in the rectum. The first attack did not result in an abscess. In the second an abscess formed which opened through the rectum and pus was seen several times. She is married and the case ought to be operated on, as there have been several subsequent attacks.

DR. LONGYEAR.—I cannot always tell that a woman has a pus tube before I operate; no one can. I think in these cases we may think there is a pus tube, while in reality the pus comes from somewhere else.

DR. CARSTENS.—You may have a tubercular lymphatic gland, as you do in the neck, which may suppurate and discharge.

DR. HUSON.—I would like to ask Dr. Carstens if in all cases of abortion he would clear out the uterus if the patient appeared normal and he had to take the patient's word for what had come away.

DR. CARSTENS.—Virtually in all cases, though occasionally you may leave one alone.

DR. METCALF.—I would like to add to the symptoms of chronic inflammation. We have a great many reflex disturbances in other organs as the result of pelvic inflammation. The heart is influenced through its ganglia, which are very large, and are reached by impulses from the pelvic viscera passing to the solar plexus and thence either up the lateral chains of the sympathetic or by means of the splanchnics to the vaso-motor centre in the medulla and thence by means of the pneumogastrics. In many cases we have constipation, the rhythm and sometimes the secretions of the intestines being interfered with. The mind is greatly involved, especially when the junction of the nervous systems at the internal os is inflamed. In these cases I have found a number of cases of insanity which were quite easily relieved. As to the elevation of temperature, whether pus forms or not, might not the vaso-motor centres in the medulla and along the cord from reflex irritation produce a rise of temperature. The peritoneum is supplied by large terminal ganglia of the sympathetic and the elevation may be due to disturbance of the vaso-motor system. Then as to the colicky pains in the tubes, perhaps the tubes have a

rhythm and when they are stopped by pus the rhythm may be interfered with, until the pus is evacuated, and cause the colic. In those cases which remain neurotic after operation, perhaps we have not removed the whole cause. I know of one case which got worse after operation. She had constipation, cystitis and painful micturition and was so fearfully nervous that she feared insanity. All these symptoms were cured by carefully removing the uterus.

DR. SPRAGUE:—As to the etiology I would be inclined to agree with Dr. Warner that we do have cases of pelvic peritonitis where there is no gonorrhœal infection, and none of the causes mentioned are at work. We have endometritis where there is no tubercular trouble. It sometimes seems to be due to imperfect development, and may extend into the tube. I have in mind one case of a seamstress who came with a retroverted womb immensely large, and a very bad endometritis and it developed into a hæmato-salpinx. None of the causes mentioned were possible in that case. She recovered, is married, has a child of eight months, and is again pregnant. Then, as regards the treatment, it seems to me that it was thoroughly exhausted as to prophylaxis and the desperate cases, but it seems to me that the intermediate treatment has not been dwelt upon enough. We have many cases of pelvic inflammation that recover almost wholly, but bands of adhesions remain that draw the organs out of position, and, from the strain on the ligaments, pain results and the patients are invalids liable to a fresh attack with any indiscretion, and ought to have treatment. There is a treatment for these cases, that which has been given to the world by a non-professional man, Brandt. His claims are discredited by many, but so great a man as Schultze has come to acknowledge the importance of massage

in these cases. I have tried it in two cases particularly, in which there was that intense hardness of the roof of the pelvis that lasted a variable length of time in such cases. In one instance, after two or three weeks the hardness was still present and I began gentle massage, gradually increasing as I found it well borne. To my gratification absorption went on very rapidly. I have a case now under treatment to which I was called five or six weeks ago, in which I did not for a time use massage, but I found the exudate not absorbing. Today I gave the third treatment of massage and I can move the parts considerably. Of course we have absorption which begins sooner than this, and of course it might be the same if I had not used massage, but the woman tells me that she feels relieved after a treatment. When she can come to my office I shall begin another form of treatment which has not been mentioned, except incidentally, to-night, and that is electricity. We have three factors in this. First, the electrolytic. This seems to melt the exudate. Second, I may call the galvanico-chemical effect due to the acids set free by the chemical action; and third, the cataphoric effect seems to me the most important. Tissues can be softened amazingly by the passage of the electrical current. I think by a combination of galvanism and massage, much can be done in a pelvic inflammation that does not proceed to pus formation, and I am beginning to think more and more that even where there is pus the patient can be made comfortable and sometimes cured by the negative electrode applied in the tube or against its uterine mouth, as I have before advocated.

DR. LONGYEAR.—There is one point I perhaps did not make quite clear. I do not wish to be understood to say that all cases of pelvic inflammations are due to gonorrhœa. Young girls

may have it due to suppressed menstruation, and these attacks will often cause adhesions. I have had good results in dissolving these adhesions by electricity.

WEDNESDAY, DECEMBER 5, 1894.

The president Dr. E. T. Tappey in the chair.

SUBINVOLUTION. DR. EMMA D. COOK.

The subject of subinvolution is one which should ever remain of great interest to the gynæcologist on account of its frequency, its persistency against remedial measures, and the fact that radical cures are seldom recorded, if perchance they are made.

An arrest of involution, one of the most interesting physiological processes of nature, by which the uterus, enlarged by conception, may resume again its normal size, is indeed a subject worthy of the most careful research as to cause and treatment.

The term subinvolution, as applied to the sequelæ of this disease, has received criticism by some of our able authors, the results as asserted being similar to those of congestion long kept up from mechanical causes; as displacements by fibrous tumors or other formative products; conditions which exist where there is no history of pregnancy.

Classing these diseases as the same, although resulting from entirely different causes they have received various names among which are the following: "Engorgement," "irritable uterus," "metritis," "diffuse proliferation of connective tissue," "infarctus," "chronic parenchymatous inflammation of the womb."

Thomas, in his "Diseases of Women," discusses its nomenclature at some length, and believes that

this pathological condition, together with all others which result in enlargement of the uterus, inflammation of its mucous membranes, engorgement of its lymphatics and blood vessels should be classed as an areolar hyperplasia, arguing that this term signifies the true conditions found more fully than any given by other authors, believing it to be an hypertrophy of the areolar or connective tissue, and in no sense a true inflammation.

To understand our subject more fully, let us briefly review the components of a healthy uterus:

Histologically, Schafer gives the following:—

First. A serous layer, derived from the peritoneum and composed of the same elements. This layer covers a greater part of the fundus.

Second. The muscular layer composed of plain muscular fibres disposed in two imperfectly separated strata. Of these the outer is much the thinner and its fibres are disposed partly longitudinally and partly circularly. The inner muscular layer is very thick; its fibres run in different directions, and it is prolonged internally into the deeper part of the mucous membrane.

Third. A mucous membrane which is very thick and is composed of soft connective tissue containing a large number of spindle shaped cells.

It contains long, simple, tubular glands which take a curved or convoluted course in passing through the membrane.

These glands are lined by ciliated epithelium continuous with that which covers the inner surface of the mucous membrane.

In the cervix the mucous membrane is marked by longitudinal and oblique ridges and the glands are shorter than those of the body of the uterus.

The mucous membrane is exceed-

ingly vascular throughout and contains large numbers of lymphatic vessels.

"Under the stimulus of conception the uterus develops rapidly, partly by growth of already existing structures and partly by new formations."

The cells increase in size the muscular elements are also much increased and lymphatics and blood vessels are dilated to properly nourish the existing pregnancy.

Succeeding parturition a retrograde evolution begins: the fibres undergo a fatty degeneration: absorption takes place and the organ rapidly diminishes to its original size and weight.

Thomas states that if unarrested this absorption is completed at the end of the eighth week.

Skene says, giving as his authority observations made by Dr. Sinclair of Boston, who took careful measurements in one hundred and eight cases after delivery,

In the majority of these cases the uterus had reached its normal size in three weeks. In one the uterus measured two and one-half inches on the twelfth day after delivery.

Influences may check this normal process, absorption no longer goes on and we have the condition known as subinvolution.

The pathology as given by Skene is as follows:

In uncomplicated cases there are no inflammatory products nor are there any new tissue formations, other than those which occur in normal gestation.

When the uterus has been affected by puerperal metritis the products of inflammation are found.

These products are inflammatory, exudations and hyperplasia of the cells of the areolar tissue. A general enlargement and engorgement of blood vessels and lymphatics.

The symptoms are not easily distinguished from other hyperplasias.

The history of a trouble dating from confinement, of bearing down pelvic pains, together with the local examination revealing a uterus enlarged displaced, undergoing a degeneration of its mucous membranes, confirms the diagnosis of subinvolution, because of an arrest of absorption after parturition at full term or non-absorption after a miscarriage.

The treatment of these cases forms an important part of the subject brought before you at this time and I hope that the discussion which follows may bring out many points of interest in this regard.

All will agree that the most potent factor in restoring this unfortunate condition is *rest*.

A second and equally important factor is to learn if possible the cause and remove it. Should this be a lacerated cervix restore the laceration; if due to a ruptured perineum an operation is always indicated. A retroverted organ should if possible be restored to its normal position and kept there until the recuperative forces of nature can act sufficiently to hold the organ in place.

Another factor of no less importance is the building up of the general health. Anemia, neuroses, constipation, indigestion are usual complications in this trouble.

These disorders should if possible be remedied.

The case whose history I will relate is as follows:

Mrs. B, aged twenty-four came to me for treatment in October, '93.

Two years before had a miscarriage after five months gestation, fœtus had been dead some time before labor, placental tissues were removed with difficulty. Patient had fever and slow recovery.

Since that time had complained of pain in the back, bearing down pains in pelvis, excessive and pro-

longed menstrual period, constipation, impaired digestion, dizziness, pain in top and back of head. Anæmia and the general nervous symptoms which accompany this class of cases were all present to a remarkable degree.

The patient was practically unfitted for mental or physical labor, and complained that riding or walking caused intense nervous symptoms. Examination showed cervix somewhat enlarged, uterus prolapsed, retroverted, enlarged (measuring $3\frac{1}{2}$ inches), a glairy discharge escaping from the cervix. The appendages seemed quite normal.

I gave her at once a general tonic treatment. Locally, I applied boroglyceride in the knee-chest position three times a week, ordering the patient to remove the support, douche with very hot water, and assume the knee-chest position for several minutes each night, previous to returning for treatment.

This, with the tonics, relieved the aggravated nervous symptoms, but the dragging-down pain and discharge still continued.

On Nov. 20, I curetted, removing a mass of fungus from the interior of the uterus, washed out with bichloride of mercury one five thousandth, and ordered the patient to remain in bed for one week. At the end of that time I made an intra-uterine injection using a few drops of a mixture of two parts of iodine to one of carbolic acid after first syringing the cavity with bichloride of mercury, my object in using the antiseptic douche being to remove if possible any fungus still within the cavity, the syringe acting as a dull curette.

I treated once a week during each inter-menstrual period. Giving the different forms of iron, cod liver oil, hypophosphites, etc., as general tonics until the general health and vigor seemed restored.

Continuing with maganese binocide as an uterine tonic until June 94, when my patient was discharged comparatively strong and well.

The uterine cavity at this time was somewhat diminished in size though not normal. The discharge had ceased the uterus was nearly normal in position.

The patient herself feels confident of a radical cure. I am only glad that the condition has thus far been improved.

I do not give this as a guide in the treatment of these troubles.

I believe each case must be treated according to the conditions found.

If there is one point which I would urge more strongly than all others it is this:

That the obstetrician be more careful in warning patients against getting up too soon after confinement, particularly in difficult labors, and miscarriages.

I am confident that one week longer in bed at time of confinement would save many women from years of suffering.

DISCUSSION.

DR. SPRAGUE.—The doctor has very fully covered the ground, and it seems to me that there is not much left to say, though I have some ideas differing from Dr. Cook in regard to treatment. Speaking first of the pathology, the description given would be as applicable to metritis as subinvolution. In the early stages of the latter we do not have inflammatory changes; it is an arrest of the retrograde process in which the muscular tissue partakes most largely. Of course the blood vessels participate in this process, and many of them become mere cords from occlusion, and the areolar tissue shrinks from lack of blood supply; but the muscle fibres seem

to undergo a fatty degeneration which results in rapid retrograde metamorphosis and great reduction in the size of the individual fibres, but not total destruction. Thus the whole process of involution is the result of diminished blood supply, an atrophy of all the tissues of the uterus. This diminished blood-supply is the result of uterine contractions, hence anything that interferes with firm contraction tends to cause subinvolution. This is perhaps the most usual condition. But we may have the diminution of blood supply interfered with by an endometritis, and this is the condition we often find after an abortion of which endometritis is the cause. I believe it may also exist after labor at full term, if there has been a previous endometritis.

With regard to treatment I think that the doctor's is quite as rational as any we find in most of the text books of today, but I have very decided views on this subject. Skene describes the treatment much as Dr. Cook has given it, and then says, if this fails he uses electricity and believes electricity is the best means of curing sub-involution. I fully agree with him in this opinion. I have had considerable experience with it. I think Massey has treated of it more fully than anyone else. There is no more rational way of curing a sub-involution, due to feeble or imperfect contraction, than by causing firm contraction of the muscular fibres and forcing the blood away and thus permitting the retrograde process to go on, and the faradic current is the best way to produce these contractions. This is, perhaps best accomplished by the intra-uterine bipolar electrode. We can often in half a dozen treatments, bring the womb down to the natural size. I have seen it done a number of times. Now that is quite opposed to the very first statement of Dr. Cook's paper and to the generally

received opinion, but I know of no case in gynæcological electro-therapeutics where so few treatments will produce such marked results. In those cases which are due to the retrograde changes being interfered with by too great endometrial blood supply, I should use the galvanic current, usually the positive intra-uterine electrode with the current sufficiently strong to destroy the mucous membrane and all shreds of decidua that may have been retained, and that treatment should also be repeated from two or three to a dozen times in order to bring about a satisfactory condition, and then the curette is not necessary. I do think, however, that we have cases of endometritis resulting in fungous growths in which the use of the curette is to be commended. In addition to destroying the membrane the current acts beneficially in two other ways, by its cataphoric and electrolytic effect, bringing about retrograde changes and absorption of fluids. There is another effect, and that is its influence upon the nutritive functions, but the rationale of this process is very indefinite in our minds, though that it has this effect seems to me very apparent. I am heartily in accord with Dr. Cook's ideas, that the patient should be watched more carefully after labor. There is great fault among physicians to-day in that respect. I believe that no patient should be dismissed under three weeks, and then a very careful examination should be made, and if a laceration of any considerable size has taken place, it should be repaired or carefully watched until it is certain that repair is unnecessary.

DR. WARNER. — I should like to say a word about the ætiology. I have no doubt, in Dr. Cook's case, that the retroversion was the cause of the subinvolution. I have seen that cause a great many times. A

woman gets up while the womb is still heavy, and in making some quick movement will cause a retroversion. I think that it is generally six or eight weeks before the womb is down to the normal size. If these cases of retroversion are taken at the time, they will not need lengthy treatment, or require the application of electricity or anything else. Place the womb in its proper position, and involution will go on. I think electricity is indicated in an old subinvolution, but I never found the electrode equal to the curette. The curette takes out all the bad tissue at one sitting instead of making an eschar and leaving it to slough away.

DR. COOK.—I am aware of the fact that electricity is the ideal treatment; but I had no means of using it, and I reported this case to show what can be done with medicines. I think it is very difficult sometimes to tell whether a case is one of endometritis or subinvolution. We have a case in the clinic at Harper Hospital, which has every symptom of subinvolution, but the woman gives no history of ever having been pregnant. I think these cases have generally passed that condition which would be properly called subinvolution before they come into the hands of the gynæcologist.

REVIEW OF GYNÆCOLOGY.

A CASE OF HYDATID CYST OF THE UTERUS. By DR. CAREAGA.

A woman, aged thirty-two, has had four children, three of whom are living, of medium size and good health, has missed her menses for the past five or six months, and during this time experienced no inconvenience excepting an increase in the size of the abdomen. The uterus was found three finger breadths below the umbilicus and was dull on percussion. The finger introduced into the vagina could penetrate into the cavity of the cervix and a soft mass could be felt, which was certainly not a foetal head or other parts, but which could have been mistaken for the unruptured membranes. As there was no hæmorrhage or other alarming symptoms, and as the frequent and energetic contractions were most similar to those of labor, expectant treatment

was carried out. Shortly after, the patient expelled in three pieces a large quantity of spherical hydatids, their size being nearly that of a fist; they were completely separated from each other and without being enveloped in a sac. Their total volume was about the size of a child's head at term. As soon as the mass was expelled the patient felt better. The author remarks that in the cases mentioned by Park, Blat, Barré and Lænnec, the hydatids did not form in the interior of the uterus as in his case. (*Arch. de gynæcopathia, obstetrica y pèdiatria*, Aug. 15, 1894. *Review in La Revue internationale de Méd. et de Chirurgie*, Sept. 25, 1894.

THE CYSTITIS OF PREGNANCY. By PROF. TARNIER.

The writer establishes in the first

place the difference between cystitis of pregnant women and the so-called irritable bladder. The latter is above all characterized by a frequent and imperious desire to urinate. It appears either at the commencement or at the end of pregnancy. At the beginning of pregnancy the frequent desire to urinate is partly due to compression of the bladder, but especially to the congestion of the entire pelvis, which is very vascular during gestation, propagating itself to the bladder, and thus irritating it. At the end of gestation, the symptoms of irritable bladder are due to compression of the bladder by the uterus and especially by the fœtus. But the symptoms are not alarming and cease by rest in bed, a bland diet and if necessary a sitz bath. This is not the case in cystitis of pregnancy, and the characteristic points in this complication are frequent and most painful micturition. The desire to urinate is frequent and accompanied by pains, which radiate to the neighboring parts; the pains are increased by pressure over the hypogastric region, by fatigue, and cease or diminish by rest. The urine is changed in quality. By vaginal examination pain is produced when the ureter is pressed on. The urine, which is always normal in cases of irritable bladder, presents variable changes in the cystitis of pregnancy, thus distinguishing it from simple hæmorrhagic or purulent cystitis. In the first instance, the urine only contains mucus and *débris* of vesical epithelium; in hæmorrhagic cystitis, the urine is more or less red-colored and contains red blood corpuscles; and lastly, if it is purulent, a whitish deposit is found at the bottom of the glass and by the microscope pus cells are found. If the ammoniacal odor is very strong, it indicates a more serious condition. When purulent cystitis has become gangrenous, fragments of necrobic vesical mucous membrane may be

found in the urine. As causes, compression of the bladder or ureters and pyelo-nephritis with consecutive cystitis have been invoked. But Prof. Tarnier believes that it is more likely due to retention of urine, so frequent during pregnancy, because retroversion of the gravid uterus can produce the same symptoms. The cystitis of pregnancy is only serious by its complications, which for that matter are incident to any kind of cystitis, and especially by abortion or premature labor that it may provoke. In delivered women, it sometimes has a fearful tenacity, and weakens the patient exceedingly, and if not following the cystitis it can only be attributed to the accoucheur, but a perfectly aseptic catheterism will not endanger the patient to this affection. Once developed, cystitis should be treated by the balsams, the following pills being often followed by an excellent result:—

R. Camphor, 0.10
 Opium, 0.01
M. F. pil. No. 1. D. tal dos. No. XX.
S. Take five or six pills daily.

If the cystitis is purulent, vesical antisepsis should be practised by means of injections of a 2 per cent. boracic acid solution. (*Clinique Obstetricale*, Aug. 1894. *Review of La Revue internationale de Méd et de Chirurgie*, Sept. 25, 1894.)

ABDOMINAL SUPRA-VAGINAL HYSTERECTOMY FOR FIBROIDS OF THE UTERUS; RETRO-PERITONEAL TREATMENT OF THE PEDICLE. BY DR. LEONTE OF BUCHAREST.

Since 1887 the writer has operated twenty-six cases of interstitial and sub-mucous fibroids of the uterus by the above named procedure. The indications for operating were furnished by the abundance of the hæm-

orrage, the increasing size of the neoplasm, pain, symptoms of compression, and, among these, especially those noticed in the genito-urinary system. Profound and progressive anæmia was never an obstacle preventing the operation, and no unfavorably consequences were noted. The technique of the procedure employed by Dr. Léonte is as follows: The tumor having been detached from any existing adhesions is drawn out of the abdominal wound and a long forceps is placed on each broad ligament on the outer side of the ovaries. A flap of the serous membrane is then cut from one broad ligament to the other on the anterior aspect of the neoplasm by means of an incision made at several centimetres above the insertion of the vagina; then the same flap is made and detached from the posterior surface of the growth. When the flaps are dissected out, the fibroid is pedicelized. The broad ligaments are first tied off by a "chain stitch" with silk, but, instead of cutting them at once, large pressure forceps are placed on the tumor at the insertion of the ligaments, which are then severed between the last named forceps and the silk sutures. The neoplasm is thus little by little pedicelized. The pedicle is traversed in its antero-posterior axis at one centimetre above the vaginal insertion by a strong blunt needle carrying a strong double thread of twisted silk. Both ligatures are crossed and tied on the sides of the pedicle and this is then cut through above the ligatures and the tumor removed. The section is oblique, in such a manner that the incision of the stump which results presents an excavation, limited by two flaps,—one posterior, the other anterior. The endometrium is curetted or excised and a ten per cent. solution of chloride of zinc is applied. Now comes the suture *en sujet* of the uterine flaps, which is done with catgut and then the stump is covered

by suturing the peritoneum over it as well as the incision left in the broad ligaments. In this way, the peritoneal cavity is completely closed below and the stump of the uterus becomes in reality extra and retro-peritoneal. The adnexa are always removed. The abdominal incision is closed without drainage. This procedure has been employed in twenty-six cases, and all were successful both as to operation and result. The after results were in most cases normal. Only one patient presented symptoms of peritonitis, but, on re-opening the abdomen, nothing abnormal was discovered. Consequently it may be affirmed that supra-vaginal hysterectomy is to be preferred to total hysterectomy. (*Revue de Chirurgie, June, 1894. Reviewed in La Revue internationale de Méd. et de Chirurgie.*)

FORMULÆ FOR DYSMENORRHOEA (G. VAN ROKITANSKY.)

R.	Ext. opil.,	0.50
	Camphor, trit.,	0.30
	Vitel. ovi.,	No. 1
	Aq. dest.,	150.0

M. D. S. For one enema which should be retained.

The following is used by Dr. Cumston for imbibing cotton tampons, which are placed against the cervix, in cases of cervical endometritis or cancer:—

R.	Thiol.,	25.0
	Terebeni pur.	10.0
	Two per cent. carbol. iod. tinct.,	5.0
	Glycerini,	40.0

M. D. S. Soak a tampon in the solution and apply to the cervix uteri.

Dr. Wm. P. Derby employs the salicylate of soda in cases of dysmenorrhœa not produced by any mechanical obstruction. He formulates as follows:—

R.	Sodæ salicylat.	0.30
	M. F. pulv. D. tal. dos. No. XXIV.	

S. Two powders to be taken after each meal for the four days preceeding the expected time of menstruation.

BOOK REVIEWS.

Dr. Derby has found this treatment most excellent in both private and hospital practice.

GENERAL PARALYSIS IN THE FEMALE. By DR. IDANOW.

The author of this excellent memoir comes to the following conclusions: First, general paralysis is more often met with in women than was formerly thought. Analysis of 104,000 insane taken from different hospitals of eight European countries shows 8 women to 10 men having this affection; second, the reason of this difference from the older writers is because general paralysis is becoming more and more frequent, especially in the female sex; third, the etiology in its principal traits does not differ in the female from that of the male sex. In both sexes one fact is characteristic, namely, the necessity of these simultaneous etiological elements (excess of mental emotion, hereditary syphilis, etc.), among which syphilis plays in both sexes a rôle equally predominant and important. Of the total number of female paralytics, sixty-eight per cent. had a history of syphilis; fourth, the most favorable

age is from thirty to forty years fifth, the different forms of evolution are the same in both sexes, and it is absurd to consider a form special to the female; sixth, the rôle of syphilis in general paralysis is double. Usually it only prepares the ground on which, with the aid of other etiological factors, acting simultaneously, general paralysis is produced. In other much rarer cases syphilis acts in a direct manner, for, in producing changes in certain parts of the brain, it may provoke a clinical picture, similar to general paralysis. This latter is the pseudo-general paralysis of syphilitic origin; seventh, the differential diagnosis of pseudo-general paralysis is most frequently very difficult to make. Among the most faithful diagnostic symptoms is the termination of the disease by a cure under specific treatment. From this fact results the last conclusion of the author, that in all cases of this affection a moderate anti-syphilitic treatment should be tried, especially in cases where a syphilitic history can be found, and in cases where former syphilitic accidents have been neglected as to treatment. (*Annales Medico-psychologiques; Review in Archives de Neurologie, Aug., 1894.*)

BOOK REVIEWS.

C. G. C.

TRAVAUX D'ELECTRO-THERAPIE GYNÉCOLOGIQUE. Founded and Published by Dr. G. Apostoli. Vol. I.; fascicules I. et II, 1894. *Société d'Editions Scientifiques, Paris.*

This new and important publication, undertaken by Dr. Apostoli of Paris, so well known for his work and writings on electro-therapeutics,

is to be a most complete review of the treatment of diseases of women by electricity. The first volume contains papers in extenso taken from the English, Belgic, American, Russian, Italian, German, Danish, Austrian, Polish, Hungarian and Canadian literature. Gynæcological electrotherapeutics is an entirely French science and the famous Dr. A.

Tripier was its father. Dr. Apostoli has founded this work with the idea of collecting all memoirs and clinical reports appearing in all countries, in order that the surgeon may have a complete book of reference of this important and rather neglected branch of medicine. The first volume has 717 pages and is most excellent in every detail. We congratulate Dr. Apostoli on his great undertaking and wish him the great success which he will no doubt achieve.

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A MANUAL OF MODERN SURGERY.

By JOHN CHALMERS DA COSTA, M. D., Demonstrator of Surgery, Jefferson Medical College; Chief Assistant Surgeon Jefferson Medical College Hospital, etc. B. W. Saunders, 925 Walnut St., Philadelphia, 1894.

This admirable little volume is one of Mr. Saunders's "New Aid Series." The aim of the manual is to present in clear terms and concisely the fundamental principles, principal operations and the *fin de siècle* methods of surgery, and the author has succeeded. The first chapter is on bacteriology, the principal organisms producing lesions, surgical being passed in review. Inflammation, repair of tissues, surgical fevers, terminations of inflammation, are treated very well. The other subjects treated are as follows: Ulceration and fistula, gangrene, thrombosis and embolism, septicæmia and pyæmia, erysipelas, tetanus, tuberculosis and scrofula, rickets, contusions and wounds, syphilis, tumors, diseases and injuries of the heart and vessels, diseases and injuries of the bones, muscles and tendons orthopædic, surgery, diseases and injuries of the nerves and head, surgery of the spine and respiratory organs, diseases of the digestive tract, abdomen, rectum and

anus, anæsthesia, burns and scalds, diseases of the skin and nails, bandages, plastic surgery, diseases of the genito-urinary organs, amputations, asepsis and antisepsis. From this enumeration it will be seen that the volume comprises everything pertaining to surgical art excepting gynecology and to special subjects such as the eye, larynx, etc., which the author has very properly not included. Special praise is to be given to the excellent description of the diseases and injuries of the bones. The art of bandaging is most practically and clearly dealt with, and the plates are well done. The book contains thirteen full-page plates and many figures, original or taken from the best French, German and American authors. The book is a success and we recommend it most heartily to the student and general practitioner.

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TRANSACTIONS OF THE MICHIGAN STATE MEDICAL SOCIETY for 1894. Published by the Society. Detroit.

The handsome volume of 589 pages is full of interesting matter. Tuberculosis forms the greater part of the medical section. However there are many other interesting papers on various subjects by different authors. In the surgical section, abdominal surgery was an important feature; several papers on genito-urinary surgery, one on the radical cure of hernia, one on laryngotomy, one on the suppurative diseases of the accessory sinuses of the nose, and three pertaining to ophthalmic science are of value. In the section of midwifery and gynecology, fibroid tumors of the uterus were discussed as to the surgical and non-surgical treatment. Several memoirs on different obstetrical operations, including symphyseotomy, were read. Two papers on electricity in gynecology, gynecology among the

insane and its relation to insanity, bacteriology in obstetrics and ergot in the hands of ignorant midwives, complete this most excellent volume.

SYLLABUS OF LECTURES ON HUMAN ENBRYOLOGY. By W. P. MANTON, M. D., Professor of Clinical Gynaecology and Lecturer on Obstetrics in the Detroit Medical College of Medicine, etc. The F. A. Davis Co., publishers, Philadelphia, 1894.

This neat little book is a general arrangement, followed in the author's course of lectures, delivered during the last ten years. In revising his notes the author has consulted the works of His, Kölliker, von Baer, Hertwiz, etc., as well as other current literature on the subject. The subjects treated are as follows: Anatomy of the female organs of generation, spermatozoid, ovum, menstruation, oögenesis, the general development of the embryo, and special organs, the heart, blood vessels and blood; the uterine and foetal membranes, the placenta and utero-placental circulation; changes in the maternal organisms incident to pregnancy; illustrations of practical work, the volume terminating with a glossary of terms and words employed in embryology. The book is interleaved for notes, and a number of figures taken from the best text-books illustrates the text.

The work is good and will be found useful to the student. The publishers deserve much praise for their excellent work.

LECTURES ON THE DIAGNOSIS OF ABDOMINAL TUMORS. By WM. OSLER, M. D., Professor of Medicine, John Hopkins University. D. Appleton & Co., New York, 1894.

This most valuable contribution to the diagnosis of abdominal tumors is

a series of five lectures delivered by the author. The subjects considered are the tumors of the stomach, liver, gall-bladder, intestines, omentum, mesentery and kidneys. Sixty-six cases are reported, with reproduced photographs, diagrams, etc. It is unnecessary to say that, from the distinguished pen from which it comes, a careful reading of the work will be most profitable to all the members of our profession.

ESSENTIALS OF DISEASES OF THE EAR. By E. B. GLEASON, M. D., Clinical Professor of Otology, Medico-Chirurgical College. W. B. Saunders, Philadelphia, etc. Philadelphia, 1894.

This little work forms the twenty-fourth volume of Mr. Saunders' question-compend. It has been written for physicians who desire to take a post-graduate course in otology, in order to give them the rudimentary facts of this branch with as little preliminary reading as possible. The book is also intended to supplement the brief course of lectures that undergraduates receive in the diseases of the ear. The work, like all the others of the series, is concise, practical and to the point. Special attention to examination of the ear is given, the work ending with formulæ employed in the diseases of which it treats. Illustrations are numerous and add greatly to the book.

THE ANNUAL OF THE UNIVERSAL MEDICAL SCIENCES. Five volumes. Issue of 1894. Edited by Charles E. Sajous, M. D. The F. A. Davis Co., publishers, Philadelphia, 1894.

The "Annual" is without a doubt, the most important index of advance for all branches of medicine that is

published, and its importance grows yearly. It forms a veritable encyclopedia of the healing art, a library in itself. The selection of its contributors makes the work most accurate in all details, and all that can be said for this year's issue, is what we have always said it is—*hors concours*.

A SYSTEM OF LEGAL MEDICINE. BY ALLAN MCLANE HAMILTON, M. D. AND LAWRENCE GODKIN, ESQ. Vol. II., E. B. Treat, publisher, New York, 1894.

The second volume of this fine work has just appeared, thus completing it. The same may be said of it, as for the first, (see October number of the *Annals*) consequently only a mention of the valuable contents will be given. Duties and Responsibilities of Medical Experts; Insanity in its Medico-Legal Bearings; Mental Responsibility of the Insane in Civil Cases; Insanity and Crime; Relations of Mental Defect and Disease to Criminal Responsibility; Affections of Speech; Traumatic Neuroses; Effects of Electric Currents of High Power upon the Human Body; Accident Cases; Mental Distress as an element of Damage; Feigned Diseases of the Mind and Nervous System; Birth, Sex, Pregnancy and Delivery; Abortion and Infanticide; Medico-Legal Relations of Venereal Disease; Marriage and Divorce, Sexual Crimes; Surgical Malpractice. The volume is illustrated by numerous plates, woodcuts and half-tone engravings.

In closing we desire to tender our heartiest congratulations to Dr. Hamilton and his corps of co-laborers.

FORMULAIRE DU MASSGE. By Dr. G. Norström, Paris, 1894. *B. Baillière et fils.*

Massage is quickly gaining ground

in therapeutics. Its great value in traumatisms of the articulations, acute and chronic arthritis, fractures, etc., is incontestable. In the diseases of the muscular system, massage grows in importance each day. In his chapter on the treatment of myosites, the author studies these cases, so frequent in practise with much clearness.

In this excellent little volume Dr. Norström gives in detail the technique and the physiological action of massage, its application in the disease of the articulations, fractures, muscular system, nervous system, diseases of the circulatory and digestive systems, the work terminating with an excellent description of massage in gynecology. The work is clear, concise and full of practical and scientific information, and is to be highly recommended to all those interested in the subject.

A MANUAL OF OBSTETRICS. By EDWARD P. DAVIS, A. M., M. D., Professor of Obstetrics in the Philadelphia Polyclinic, etc. Second edition. P. Blakiston, Son & Company, publishers, Philadelphia, 1894.

The second edition of this excellent volume has been thoroughly revised, a chapter on symphyseotomy has been added, as well as additional facts regarding palpation and the diagnosis of positions. The personal experience of the distinguished author has guided the choice of methods of treatment commended in its pages. The abundance of fine plates and engravings renders the work most excellent for the student, as well as the general practitioner, for the demonstration of the subjects treated in the text, and this second edition of the Manual will meet with as great success as its predecessor.

AN INTERNATIONAL SYSTEM OF ELECTRO-THERAPEUTICS: FOR STUDENTS, GENERAL PRACTITIONERS AND SPECIALISTS. By HORATIO R. BIGELOW, M. D.; AND THIRTY-EIGHT ASSOCIATE EDITORS. Thoroughly illustrated. In one large royal octavo volume, 1160 pages, extra cloth, \$6.00 net; sheep, \$7.00 net; half-russia, \$7.50 net. The F. A. Davis Co., publishers, 1914 and 1916 Cherry street, Philadelphia.

This excellent treatise is thoroughly practical and full of important matter. Written as it is by the masters of their respective subjects, it is absolutely of highest value to the physician, surgeon and gynæcologist. To mention all the names of contributors would be too long, but such men as Bigelow, Tripièr, Jacobi, Newman, Rockwell, etc., have written largely for it. Electricity, its technique and indications in treatment of disease, is now no longer to be despised, and should be cultivated and recognized by the medical profession, and, with such a work as this, there is no excuse for the unscientific man-

ner in which many of the profession employ this useful therapeutical means. The subjects treated are as follows: Electro-physics, animal electricity, static electricity, magnetism, induced current, electro-magnetism, electro-massage, instruments, galvanism, electro-physiology, electro-diagnosis, cataphoresis, treatment of intestinal occlusion, diseases of the alimentary tract, liver and kidneys by electricity, gout, rheumatism, heart and lungs, diseases of the uterus, fibroids of the uterus, methods of Apostoli and others, diseases of the uterine adnexa, engorgement and displacements of the uterus, disorders of menstruation, diseases of the female urethra ectopic gestation, cancer of the uterus, diseases of the skin, nose, pharynx, larynx and eye, diseases of the brain and spinal cord, electro-thermal surgery, strictures and hypertrophy of the prostate, abscess, adenomas, incontinence of urine, orchitis, hydrocele, spermatorrhœa, gonorrhœa, electricity in obstetrics and diseases of children and adhesions in the acute and chronic inflammatory disorders of the female pelvis.

ANNALS

—OF—

GYNÆCOLOGY AND PÆDIATRY.

DEPARTMENT OF PÆDIATRY.

The So-called Idiopathic Purulent Peritonitis in Children.

BY CHARLES GREENE CUNSTON, B. M. S., M. D.

IN this short review the writer only desires to call attention to two recently published cases of the so-called idiopathic purulent peritonitis and at the same time to make a few remarks gathered from medical literature. Although a certain number of cases like the following have been published since Gauderon's thesis in 1876, there is no doubt but that this memoir still remains the best and most complete on the subject on which I am writing.

Idiopathic peritonitis is commoner in infancy than in adults. Duparcque (1) described what he termed an essential peritonitis, which he met with most frequently in young girls of from eight to eleven years of age. The disease appeared spontaneously in the midst of health, without other cause than exposure to cold or an indigestion. This spontaneous type of the disease has also been observed by Legendre, Rilliet, Marten, Althaus and others. Twenty-five cases have been collected by Gauderon in children of five to eleven years of age

living in boarding schools, etc. Fifteen of them were girls, the remaining ten being boys. Gauderon attributes the disease to cold after moderate exercise, while Legendre mentions iced drinks and lying on wet earth as a cause.

The first case, which is reported by Prof. Grancher, of Paris, (2) is as follows: A little girl, aged eleven, entered the hospital on March 19, 1894. Born at term, she was brought up on the breast and had never had any affection which could account for the peritonitis. Her malady commenced three months previously with fever, insomnia, constipation and abdominal pains, particularly in the right iliac fossa. For three weeks she remained in bed, when these symptoms ameliorated; the mother then thought that there was a tumor in the left iliac region. The patient got up, but walking was painful. On March 1, the pain was more acute, and a most important symptom appeared, namely, a bloody purulent discharge from the

vagina. From this time this symptom has been about constantly present. Prof. Grancher examined the child on the twentieth and found the entire sub-umbilical region hard and pasty and dull on percussion; the part was painful, and on pressure a great quantity of bloody pus could be made to ooze out from the vagina. There was no fever nor vomiting. However, two days later fever appeared, (39°) the urine became purulent and at the same time the skin over the umbilicus became ulcered, then perforated, allowing the issue of a little pus.

Prof. Grancher waited for a week before operation was deemed advisable, because there are cases of this kind in which spontaneous cure has taken place. During this time there was fever every evening, abdominal pains became more severe and the vaginal discharge was not so free. Laparotomy was done by Dr. Breen on April 4. The fistula was opened up and on incising the peritoneum a great quantity of pus escaped. The cavity was explored and found to be limited above by adhesions, while below there were none, the uterus and adnexa being easily explored; the operation was terminated and drainage established. The dressings were found to be soiled by urine, consequently indicating a communication between the pocket and the bladder. A permanent sound was placed in the bladder, with the result that on April 28 all urine was passed by the bladder, and on May 4 the abdominal wound was completely healed.

The second case is reported by

Dr. Tapie (3) and is especially interesting from the fact that the patient was only twenty-nine months old. The case was diagnosed by Dr. Sauné as peritonitis, and after three weeks pus came away from the umbilicus, below a hernia which had formed at this point, followed by great amelioration. However, the patient's condition began again to get much worse, and about two months later Dr. Tapie was called. He found the patient in a very bad state, the abdominal walls were distended by a large collection. The orifice from which the first pus had issued was sought for and with difficulty a female catheter was inserted through a punctiform opening, letting forth about three pints of pus. A stick of iomaria was then introduced and the cavity was washed out with a boracic acid solution for several days. The patient improved rapidly and a complete cure was obtained. It has often been argued that these cases are perhaps sub-peritoneal abscess, but doubt is hardly possible and to-day we are less astonished than formerly at seeing a peritonitis recover.

The special point in these two cases is the opening at the umbilicus, which fact has been observed ten times out of twenty-five cases collected in Gauderon's thesis and is apparently benign, as out of twelve cases (including the two given in this paper) only two deaths occurred. The rapid recovery of both cases cited after evacuation of the pus is most striking, for the patients were in a very bad condition. As to the terms of idiopathic or essential purulent peritonitis of children, they only

signify that it is not due to perforation of the intestine or appendix or to tuberculosis. When these two great classes of peritonitis are eliminated we are in presence of a doubtful and uncertain etiology, but one which bacteriology is clearing up, and it is only a question of time before cold etc., will be put aside as a cause and something definite found.

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The numbers correspond to those in the text:

- (1) Duparcque. *Annals d'Obstetrique*, vol. I, page 241, 1842.
- (2) Gaucher. *La Presse Médicale*, Sept. 8, 1894.
- (3) *Bulletin de la Société de Médecine de Toulouse. Review in Journal de Médecine et de Chirurgie Pratiques.* Aug. 25, 1894.

Meeting of New York Academy of Medicine. Section of Pædiatries,
November 8, 1894.

Joseph E. Winters, M. D., chairman.

A paper was read by Dr. A. Campbell White, entitled:—

THE ANTI-TOXINE TREATMENT OF
DIPHTHERIA BASED UPON A SERIES
OF CASES TREATED AT WILLARD
PARKER HOSPITAL.

ATTEMPTS have been made for a long time to obtain immunity from the infectious diseases by artificial means. The first practical result was obtained by Jenner in 1798 in small-pox. Attempts have constantly been made during recent years to accomplish similar results in other diseases. The work is based upon the principle that cultures of the various micro-organisms can be made less and less virulent, until finally they are capable of producing only the mildest form of the disease when injected into the living body, but however carefully this process is carried out there is always some danger that this reaction may be greater and more pronounced than is desired or safe. Recognizing this danger, workers have labored to ob-

tain similar powers of immunity without using the disease poison itself. It has been found that the blood of animals rendered immune is capable, when inoculated in susceptible animals, of granting the same immunity. This method is followed by no reaction. Whether the serum thus obtained acts directly upon the toxine, or whether it causes some reaction in the tissues of the body, is a question of dispute. The latter theory would seem to be the more correct. Whatever its action, this inoculation of serum obtained from an artificially immunized animal is preferable to the attenuated bacilli method. Thus there are two methods of bacterio-therapy. It is upon the last that treatment by anti-toxine is based. To Behring, of Berlin, is chiefly due its discovery and development.

This serum is obtained as follows: First, a pure culture of the diphtheria bacilli must be obtained. A poisonous culture having been prepared and its strength determined, it is injected into the animal which is to furnish

the serum, beginning with very small doses, which are gradually increased until the most powerful poison can be resisted by the animal. It requires many months to obtain such immunity, with the constant liability of losing the animal from an over-dose. The horse, being slightly susceptible and furnishing much anti-toxine, is recently being used. The animal, when it has developed a high degree of immunity, is ready to furnish anti-toxine. Blood is drawn and the serum is separated. This serum contains the anti-toxine. To insure accuracy of dose, the amount of anti-toxine in the blood must be determined. This is successfully done by a rather elaborate method devised by Behring. To understand the action of anti-toxine a clear idea of the disease must be obtained. Age is a very important factor as shown in the death rate of diphtheria. In one hundred and eighty-eight cases over sixteen years old, treated at the hospital, less than three per cent. have died. The mortality between five and sixteen years, although higher than in adults, is surprisingly low for a disease commonly considered so fatal. The mortality at this age during the past year was thirteen per cent. The mortality in five hundred and six children under five years was forty-two and seven-tenths per cent. Diphtheria is, therefore, as far as mortality is concerned, a child's disease. Treatment should be directed therefore, against the disease as it occurs in young children in order to judge of its efficacy. It is well known that the mortality is higher during certain months of the year, the highest rate usually being in February. It is higher also in certain epidemics than others.

If a fatal result is due directly to diphtheria, *i. e.*, to infection by the Loeffler bacillus, the patient dies during the first ten days from toxic

infection, membrane extension, and occasionally from paralysis. In those cases who die later than the tenth day death is due generally to pneumonia or paralysis. Taking all the facts into consideration, the remedy for diphtheria which will prolong the life of the patient beyond the thirteenth day has carried him almost beyond the danger of death, and can truly be called a specific.

Studying still farther cases which died from diphtheria, we find the mortality almost entirely confined to those patients who had false membrane, not on the tonsils and pharynx alone, but, added to this, diphtheria of the posterior nares and larynx. Cases which did not have false membrane in the nares and larynx, generally recovered. Proper treatment of these cases undoubtedly aids largely in saving life. The essentials of the treatment pursued are as follows:—

First. Absolute rest in bed in recumbent position.

Second. A fluid diet.

Third. A room kept at a rather high temperature (75° to 80° F).

Fourth. Thorough, frequent, and complete washing of the nasal, and throat cavities with a normal salt solution.

Fifth. Tincture of the chloride of iron in large doses.

Sixth. Stimulation and catharsis as indicated.

In addition to this treatment we have depended almost entirely in the laryngeal cases upon calomel sublimations and moist heat applied externally, with operative interference when necessary. This treatment certainly has an effect in preventing extension of membrane. Still, in opposition to all our efforts, there is a certain class of cases which furnish a frightful mortality and make diphtheria the most dreaded of the infectious diseases. These are the cases in which the disease has invaded the larynx and naso-pharynx. Such

cases are always dangerous at any season of the year and in any epidemic. It was from this class of cases that patients were selected at the hospital for anti-toxine treatment. The serum used was that made by Aronson, and was furnished by Schering and Glatz, the agents in this country. In no case were the injections followed by signs of local inflammation. Twenty cases were treated during August and September. They were all serious cases with an unfavorable prognosis, one only being over five years of age. The treatment consisted entirely of injections of anti-toxine, with the exception of irrigating each case once on admission. Stimulation was given as indicated. Five of these patients (25 per cent.) died. Their average age was three years. In seven, the tonsils, pharynx, and nares were involved. There were three intubations and one tracheotomy. Three had albuminuria and four paralysis. Fourteen were laryngeal cases, with membrane also in the throat or nose. In the remaining cases the naso-pharynx was involved. Theoretically, the anti-toxine could have prevented but one of these deaths, for in four cases death was not directly due to the diphtheria toxine. One died on the twenty-fourth day of lobar pneumonia; another on the thirty-fourth day of broncho-pneumonia, long after the bacilli had disappeared; another from pneumonia, twenty days after the bacilli had disappeared. It would probably be more just to exclude these cases, which would leave one death in sixteen, or a mortality of six and two-tenths per cent. among cases selected on account of their severity.

The effect noticed upon the pulse is important. In nearly all cases, nine hours after the injection the pulse was much improved in strength, volume, and frequency. The diphtheretic membrane disappeared in the

average on the ninth day of the disease — about the ordinary time. The persistence of the bacilli, as would be expected, was not apparently influenced. Anti-toxine given early should prevent post-diphtheretic paralysis. The paper concludes with an extended report of the results gained by others under the same treatment. The writer reports in all four hundred and eighty-six children treated for true diphtheria by various observers with different strengths of anti-toxine solution. One hundred and sixteen died, a mortality of twenty-three and eight-tenths per cent. in a class of cases in which about fifty per cent. always die. It should be understood that in many of these cases treatment by anti-toxine was begun late. The paper concludes that, when we add to our own cases the results obtained by others we cannot but believe that we have received in anti-toxine not only a remedy that will grant immunity for a short period of time, but a specific, which in every case given early in the disease in sufficient quantity prevents death by the absorption of the toxine of diphtheria.

DR. HERMAN M. BIGGS had studied the action of anti-toxine for several weeks during the past summer in Berlin. It is an important fact that this method of treatment is not a simple discovery, but a logical development, the result of several years of bacteriological study, and at least three years directed to this special purpose. He was struck by the fact that in Berlin there seemed to be no doubt in the minds of the most competent observers of the value of this remedy. They seemed to be convinced that the period of experiment has passed and that anti-toxine ranks as an element of the greatest value. Infectious diseases, it is well known, are due, not directly to germs, but to the products of germs. Death is due to the effect of a chemical poison. The action of anti-toxine is not pecu-

liar; it is a true chemical antidote. It has the power of neutralizing the toxine outside of the body; the amount thus neutralized determining its strength. The dose is, therefore, graded by the age and body weight of the patient.

DR. W. H. PARK said that tolerance for an infectious disease in an animal is slowly produced by injections of the toxine, if only given in sufficiently attenuated form. As the anti-toxine develops, stronger and stronger doses of the toxine may be administered. The amount of anti-toxine may thus be enormously increased. Toxine and anti-toxine may both be present in the blood at the same time. As the toxine increases during the course of the disease, the amount of anti-toxine must also be increased as the time after the inoculation increases. If the patient is seen on the first day, one or two doses may be sufficient. If the treatment is begun on the fifth or sixth day, many doses may be required. There is a tendency to compare anti-toxine with the lymph used in tuberculosis. There is one marked difference between them. In tuberculosis the toxine is itself employed with the expectation that it will produce the anti-toxine in the body. In diphtheria the anti-toxine is produced in other bodies and no toxine is used. The use of the anti-toxine does not prevent other treatment, nor the use of other drugs. It is not a general antiseptic and does not effect the bacilli in any manner. It simply neutralizes the poison produced by the bacilli.

DR. GEORGE F. SHRADY said that he had passed through several epidemics of new remedies for diphtheria. When diphtheria first appeared in New York over thirty years ago the mortality was ninety per cent. This has largely decreased and much is now accomplished by treatment. Many special plans of treatment have

been lauded as specific, but have failed. He believes that the present method by anti-toxine will probably be proved to be a specific. It seems likely that medicine is soon to rank with surgery as regards advance through our knowledge of bacteria.

DR. W. P. NORTHRUP said that so much depends upon the character of the epidemic prevailing, that a simple statement of percentages cured means little. During the present summer and fall the number of cases were rare and the number of recoveries large. The cases, however, reported by Dr. White were apparently severe. A very important point was the very good effect of the treatment upon the pulse.

DR. L. FISCHER reported his experience with the treatment in Berlin during the past summer, where he became convinced of its value. Marked improvement was not expected until forty-eight hours after the first injection.

DR. H. W. BERG said that it was difficult to tell clearly in advance which would be mild and which severe cases. These cases reported, however, seemed severe.

DR. J. LEWIS SMITH asked if the anti-toxine had any effect on pseudo-diphtheria. Dr. Fischer replied that it had not.

DR. ANDREW H. SMITH said that at least one good result from the use of anti-toxine would be the prevention of over-zealous local treatment, which he believed was capable of much harm.

DR. WINTERS said that in cases of mixed infection the course of the disease was not favorably affected by anti-toxine. It is rare to lose a case by septic infection in which the naso-pharynx is not involved, the cause of death in septic cases being almost without exception naso-pharyngeal infection. The death rate in Europe from diphtheria is enormously high; it seems to be a more

virulent type of disease. In this city the average death rate cannot be over thirty per cent. Rest in bed is a most important element in treatment. Failure to put the child in bed and to keep him there from first to last is the cause of extension in many cases. While he is strongly impressed with the favorable results obtained by anti toxine, he does not

believe that the number of cases is yet sufficient to warrant an absolute statement.

DR. WHITE said that the death rate reported from Europe was mostly that of the hospitals in which the number of young children predominates. The death rate here of the same class of cases is equally high, viz., almost fifty per cent.

REVIEW OF PÆDIATRY.

TRIONAL IN THE INSOMNIA OF CHILDREN. By DR. A. CLAUS, GENT.

Trional was introduced into therapeutics by Barth and Rumpel, and since that time numerous reports have been published, the most important being by Schultze, Horvath, Schæfer, Ramoni, Boettigér, Raimodi, Mariottini, Brie, Bayer, Hammer-schlag, Randa, Collatz, Pelanda, Cainer, Krass, and Mabon.

The majority of the observations that have appeared up to this time deal with the employment of trional in mental diseases. The results obtained are very remarkable, and the observations collected by us with reference to its use in insane asylums are equally satisfactory.

As mentioned above, we were induced to test trional in pediatric practice in consequence of its innocuousness as regards the intellectual, digestive, circulating and respiratory functions, and on the ground of our experience we were led to prefer it to all other remedies which are in general employed for the insomnia of children. It is not our intention in this article to discuss this conditions in detail; suffice it to say that insomnia is of frequent occurrence in children, and is always a symptomatic

disorder. In cases where it exists there is always an anomaly of the functions of the infantile organism which we should seek to discover.

Insomnia from anomaly or an affection of the nervous system. It seems needless to discuss in detail the dangers arising from the use of trional in meningitis, meningæal or urebral hæmorrhages, encephalitis, congestion of the brain and spinal cord-diseases, which are all accompanied by obstinate insomnia. In cases in which the prognosis is absolutely hopeless, and which are attended with terrifying dreams and obstinate wakefulness, the use of a hypnotic is occasionally to be considered. This is a matter of personal opinion. In cases where a hypnotic seems indicated, however, we would recommend trional, because its action is the most reliable and associated with the least risk.

In other nervous affections attended with sleeplessness trional is extremely serviceable. Among these affections we would mention especially chorea, convulsions, and, above all, the night terrors of children, a frequent disorder.

Chorea. July 15, 1894, a girl, six years old, suffering from severe chorea, of three weeks' duration, hereditary disposition present, the

father being an alcoholic subject and the mother a nervous woman; one of the sisters had died from infantile paralysis. The upper and lower extremities of our little patient were actively moved to and fro in an irregular manner. The general health was disturbed, and there was great restlessness at night. Scarcely had the child fallen asleep when it was roused up by frightful dreams. The appetite was completely lost.

In view of the violent excitement of the child and the injurious influence which this excitement exerted upon the general health and upon the choreic movements, we at once resorted to the use of trional-bayer, in the dose of 1.0 gm., with the direction to give the powder, in a little confection, ten minutes before retiring to sleep. The neighboring apothecary had no trional and we substituted chloral, which we employed for two days without much relief. The child slept for about two or three hours, but the sleep was restless and the choreic movements continued. After trying chloral for two days we were able to obtain some trional, and from the time of its administration a decided change ensued in the condition of our little patient. The nights were quiet, the child slept for about six hours, without the least excitement. During the day the movements were less irregular. The appetite gradually returned. We continued the use of trional in the same dose for eight days, and then administered it in doses of 0.5 gm. for three weeks, at the end of which time the child had almost completely recovered.

Trional, therefore, proved an excellent auxiliary in the treatment of this severe case, since it removed the insomnia from which the patient suffered, and had a favorable influence upon the digestion. In two other less marked cases of chorea,

trional was employed with equally satisfactory results.

Pavornocurnus. It frequently happens that we are called upon to prescribe for a pedicular morbid condition designated as pavornocurnus (French, *terreurs nocturnes*).

It is a difficult undertaking both for physician and patient to combat a dream. These frightful nightmares which convert the period of physiological rest into a period of excitement and unendurable discomfort are capable of affecting in the course of time, both the condition of the mind and body.

We subjoin a few formulas among those hitherto recommended. Dujardin-Beautmetz prescribes:—

Aqu. chloroformi,	
" aurantiflor.,	
" tilia,	aa 50.0 gm.
Potass. bromidl.,	1.0
Syrup papaveris,	20.0

Jules Simon first resorts to opiates in fractional doses, beginning with small doses, gradually increasing, and watching the effect. He orders tinct. opii crocata, tinct. opii benz., syrup codeini, potass. bromid. for children with an excitable nervous system. If the opiates are contraindicated he prescribes chloral *per os* or *per rectum*.

Huchrad gives to young children:—

Urethan,	0.2 gm.
Aqu. tilia,	
Aqu. aurant flor.,	
Syrupl,	aa 20.0

In place of these, in part very dangerous remedies, we have employed trional with success. Among the seven or eight successful cases treated we communicate the following:—

A child two-years old, ill-nourished, starts up suddenly from sleep at night. The face wears an expression of fright; the child clings closely to the mother, seeking protection, and is unable to fall asleep again.

On the advice of a neighbor the mother prepared a decoction of poppy heads, a remedy much in use among the working classes. At our first visit we found the child in a condition of stupor. We took pains to make clear to the mother the danger to which she exposed the child and the responsibility she was taking upon herself, and ordered a warm bath at night and especially interdicted the decoction of poppy-heads. In three days the mother returned and stated that the child resisted bathing and requested a prescription. We advised the pack, but on the following morning she reported that she had employed it without success. It is likely, however, that she never made use of this measure, as it is difficult to teach the lower classes that certain affections should be treated by other means than the administration of drugs.

We now prescribed trional in doses of 0.5 gm., with the condition that she should bring the child for inspection every day. During the first four or five nights the effect of trional was not perfectly satisfactory; the child had an attack of excitement, but fell asleep of its own accord. After the sixth day the insomnia disappeared, and since then the child has enjoyed quiet sleep. We continued trional in the same dose for the three following weeks without noting injurious after-effects. The child's health has greatly improved, both physically and mentally. During the last four weeks the mother has found it necessary to administer the remedy on only two occasions when the child seemed unusually excited.

In the case of a child, eight years old, suffering from epilepsy we employed trional in 1.0 gm. doses in the evening, and observed that sleep was more restful. Diminution of the epileptic attacks was not, however, noted, a fact which does not excite surprise.

We regard it as unnecessary to say any more with regard to the value of trional in those forms of insomnia which accompany disturbances of the digestive, respiratory or circulating organs, as well as in reference to its value in the infectious or toxic variety of insomnia. We have given it in several cases of gastritis, in cases of sleeplessness due to disturbances of dentition, in cases of insomnia from measles, and always noted considerable relief. In several cases of insomnia arising from disturbance of the digestive functions, we observed improvement under the influence of trional. This experience is not new. It has already been made in mental disease, and Dr. Vermeulen and I have often obtained the same results from the use of sulfonal.

After-effects. CASE I. A child, five years, suffering sleeplessness during convalescence from a broncho pneumonia, which had greatly impaired the general health. Trional in doses of 0.75 gm. administered. On following morning the mother, an intelligent woman, observed that the child walked with difficulty and had a staggering gait indicative of a certain amount of ataxia. Suspecting that the dose had been too large we gave 0.5 gm., with the result that the child slept well and no ataxia followed. At the end of eight days sleep was normal.

CASE II. A child six years old suffered from a phlegmon of the neck, which was very painful on pressure. We prescribed 0.3 gm. without effect, and on the following day increased the dose to 0.5 gm., which was followed by excitement, the pains preventing sleep. After incision a dose of 0.2 gm. produced refreshing sleep. If we would draw a conclusion from the latter case it would be that trional fails to act in the presence of pain.

We would also mention that in three cases of incontinence of urine, trional was given without success, while in a fourth case it had a favorable effect during the time the patient was under observation.

DOSE AND MANNER OF ADMINISTRATION.

From one month to one year,	0.2-0.4 Gm.
" " year " two years,	0.4-0.8 "
" two years, " six "	0.8-1.2 "
" six " " ten "	1.2-1.5 "

Trional is best given one-half hour after the evening meal, at the latest, fifteen minutes before retiring. It may be administered in warm milk, although we prefer to give it in confection or honey.

Conclusions: 1. Trional, in doses of 0.2 to 1.5 gm. according to the child's age, is an excellent hypnotic. On the morning following its administration, no headache or dulness is observed. It favors physiological sleep. Habituation does not occur. Sleep ensues in from ten to fifteen minutes after its exhibition.

2. Trional has no marked influence in the insomnia due to the pains.

3. Trional does not affect the intellectual circulating and respiratory functions, and has a favorable effect upon the digestive process.

4. In the insomnia of toxic and especially alcoholic origin, chloral appears more efficacious. The latter statement is based upon two observations made by us. (*La Flandre Medicale*, Oct. 28, 1894.)

SUBPHREMIC ABSCESS IN A BOY ABOUT 6. By DR. HOLME.

The author relates a case of this kind, in which incision of the cavity gave exit to 800 c. c. of pus. Introduction of the finger showed that the abscess was under the diaphragm, being limited below by the liver, stomach, and other abdominal organs. The seventh rib was resected posteriorly in the aux-

iliary line, a drainage tube inserted, and the wound dressed aseptically. The cavity gradually contracted, and the patient was discharged cured in three months. No tubercle bacilli were found in the pus. (*Hospitals-Tidende*, 1894; *Review in the Universal Medical Journal*, Oct., 1894.)

URTICARIA PIGMENTOSA. By DR. ARVID APZELIUS.

Author describes a case of this affection in a girl about three. When four months old the mother noticed a number of disseminated red swellings on the chest and extremities, usually appearing after a bath, and resembling gnat bites. Three months later the author was called to see her, as the swellings had become very numerous, particularly on the upper part of the back, the posterior part of the right leg, and the scalp. The spots were situated close together and were irregular in form and size and light brown in color. They did not disappear on pressure, but urticaria factitia appeared when the spots were pricked with a pin. Itching was slight. The number increased gradually, the old spots becoming darker in color and uniting one with the other. (*Hygiea; Review in the Universal Medical Journal*, Oct., 1894.)

DIAGNOSIS OF TUBERCULOSIS IN CHILDREN. By DR. E. WEILL.

The author has observed a special syndrome in three cases of infantile pulmonary tuberculosis, which he believes to have been as yet unnoted. It consists in a sensation of cold with perceptible lowering of the peripheral and central temperature, marked cyanosis of the extremities, with noticeable modification of the radial pulse, considerable alteration in the number of red cells in the cyanosed portions, and in the composition of the urine. These conditions are readily produced by having the patient leave his bed,

and they slowly disappear when he lies down. They are transitory symptoms of an intermittent character, independent of the clinical form of the tuberculosis, of the stage of the disease, of the season, or of the diet. (*Lyon Médicale*, May 20, 1894. *Review in the Universal Medical Journal*, Oct., 1894.)

TREATMENT OF ALOPECIA AREATA IN CHILDREN. By Dr. Feulard. Cut off hair with scissors, as closely as possible; apply following ointment every evening:—

R.
Sulphur prescrip., 3.0 grammes.
Acid. salicylat., 1.0 grammes.
Ung. simpl.,
Vasellini aa. 15.0 grammes.
M. D. S. Ointment.

Next morning wash head with *salicylic acid soap*; rub with soft brush dipped in the following:

R.
Sublimata, 0.30 centigrammes.
Tinct. rosmurini.
Alcoholis aa. 100.0 grammes.
M. D. S. For external use only.

Once a week paint the affected areas with *essence of wintergreen* and *ether* of equal parts. (*Jour. de Méd. et de Chic. pratiques*; (*Review in the Universal Medical Journal*, Oct., 1894.

TREATMENT OF CYSTITIS IN CHILDREN. By PROF. ESCHRICHE.

Cystitis is not an uncommon affection of childhood, being met with

more frequently in girls than in boys. The etiology is often obscure. In infantile cystitis the urine is not always alkaline and may have an acid reaction. This latter condition of the urine of cystitis is considered by the author as due to an infection from the bacterium coli. In the treatment of cystitis with alkaline urine Prof. Escherich always irrigates the bladder twice daily with a tepid solution of boracic acid at one per cent. or two per cent. or thymol at five per cent. At the same time he gives one of the following potions:—

R.
Potass. chlorat., 2 to 3 grammes.
Aq. dest., 150 grammes.
M. D. S. Take a tablespoonful every two hours.

R.
Fol. uvæ ursi., 15 grammes.
Infus. in:
Aq. bull., 150 grammes.
Add:
Syr. sacchar., 10 grammes.
Take a teaspoonful every two hours.

When the urine is acid, the writer obtains excellent results from vesical irrigations with weak solutions of creolin (10 to 15 drops of creolin in 250 grammes of tepid water), and, internally, small doses of salol. (*In Semaine Médicale*, Aug., 1894; *review in La Revue internationale de Méd. et de Chirurgie pratiques*, Sept. 25, 1894.)

ANNALS

—OF—

GYNÆCOLOGY AND PÆDIATRY.

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What has Sewer Gas Got to Do with Bad Results in Obstetrics and Gynæcology?

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ENGLAND.

Fellow of the Obstetrical Society of London, Fellow of the American Gynæcological Society, Gynæcologist to the Montreal Dispensary, Surgeon to the Western Hospital, Montreal, Canada.

AN article from the pen of one of the master minds of the profession, Dr. Jacobi, of New York, having recently appeared, in which the opinion is forcibly expressed that sewer gas is not nearly so injurious as is generally supposed, and that the various diseases which were generally attributed to it are conveyed to the patient in totally different ways, I believe that it is but right that some clinical facts which have come under my notice should be reported, for there is no doubt in my mind that sewer gas is the medium for conveying septic bacteria to the raw surfaces of the genital tract after labor or plastic operations, and to the abdominal wound after cœliotomy.

To begin with, allow me to briefly refer to the remarkable immunity

from puerperal fever at the Preston Retreat, in Philadelphia, and at the Sloan Maternity in New York. Any one who has visited these institutions could not fail to remark that there is not one sewer pipe within the building proper, all closets, bath-rooms, sinks or basins being situated in towers or buildings, having no connection, except by galleries, with the main building.

Let me also remark that in several outbreaks of diphtheria, in this and other cities, the greatest percentage of cases occurred in the houses of the rich situated on the heights or upper portions of the city, and in which many of the rooms were provided with the luxury of permanent marble basins.

Not that I maintain that sewer gas

itself is poisonous, but that it is generally loaded with bacteria given off from the infected culture medium contained in the sewers while it is being dashed about on its way to the outlet.

Then again we find the New York Women's Hospital, where the work is carried out in the most scientific and careful manner possible, having a high death rate after cœliotomy and frequent failures to heal by first intention of abdominal and other wounds, until the surgeons of that institution demanded pavillions away from the costly and expensively drained main buildings, when their results immediately began to improve.

Then we have the experience of one of the first surgeons of Canada, a gentleman of a European as well as an American reputation, losing his first nine cœliotomies, until he refused to operate in the well-drained hospital, and demanded a separate building devoid of plumbing, since he obtained which his results immediately began to equal the best.

Then comes my own experiences, which were as follows: Three years ago I took the service of a colleague who was absent on a summer holiday and obtained union by first intention almost invariably both in the abdominal incisions and in my operation on the cervix and perineum, and after removal of the breast. A few months later the absent one returned, when the autumn winds rendered it more pleasant to have the windows closed. What was the result? Suppuration was occasionally seen in the wounds, and now and then a cervix or a perin-

eum failed to unite. In my own mind I attributed this difference in healing to my friend being a little less scrupulous in the exercise of aseptic precautions. But in this I wronged him, as it was afterwards made clear. My regular term of service came round on January 1, when the double windows were on and all the cracks were pasted up with paper or stuffed with cotton, it being difficult even then in very cold weather to keep the building comfortable. Taking especial pride in getting my wounds to heal without suppuration I redoubled my aseptic precautions, but they did no better than my colleague's, who had just finished his term of service. First, in a case of Alexander's operation, which at my private hospital always had healed by first intention, at the other institution the edges next day became a little red and around the stitches there was a little thickening, and a day or two later the wound was suppurating. Then I learned from my friend in charge of the obstetrical department on the top flat of the building that in spite of every precaution* he was having a series of high temperatures in every woman who was confined. Next a case of curretting and repair of the cervix and perineum under my care suddenly developed a high temperature,—an almost unheard of thing heretofore. She looked so ill and her pulse became so rapid that a thorough examination was made, when a diphtheritic membrane was found cover-

*These precautions consisted in staining the hands almost black in strong permanganate solution, then whitening them in oxalic acid, and then washing them with bichloride solution, similar precautions being taken with the patients.

ing the cervix and perineum. This was thoroughly cleaned with strong bichloride of mercury and frequently douched with the same, and the patient was placed on a very supporting diet. I felt sure that there was something wrong with the drainage and requested the authorities to have it examined. Several of the authorities took a different view of the cause of the outbreak, attributing it to a visitor who had a child sick with diphtheria having visited a patient in another ward. Besides they claimed that they had had the drainage overhauled during the previous summer. Then several other non-operative cases developed sore throats, as did some of the resident staff. Then three cases of midwifery on the top flat developed diphtheria of the womb and vagina, one of them dying very quickly of a sort of gangrene of the uterus, another one dying a week later, both in spite of the most active treatment with peroxide of hydrogen, etc., and a third one being cured with great difficulty. Then all the patients were sent home and attended there by their respective surgeons and physicians, where all recovered. Then the authorities had the plumbing examined by means of the smoke test, which consists in placing a box on the roof of the building near the ventilating soil pipe, with which the smoke box is hermetically connected. Some cotton waste impregnated with some oleoresinous material is lighted and gives out a great quantity of pungent yellow smoke, which is forcibly pumped down the soil pipe until it reaches the sewer. If there is the slightest leak of sewer gas in any of

the pipes, of course this smoke will escape equally as well. The sewer gas cannot be seen or even some times smelled, but the smoke of the smoke-box can be both seen and smelled as it pours forth from any defect. In the case under notice the pipes were found to be all staunch and faultless, but a vast stream of smoke was seen to emerge from a three-inch hole in the concrete floor of the laundry, and on further investigation it was found that this hole connected directly without any trap whatever with the soil pipe running into the sewer. This was a plumber's blunder, but it cost two lives and a great many more long and tedious convalescences, both of gynecological and obstetrical cases. This defect was at once remedied and work begun again, wounds all healing as a rule by first intention and a high temperature in the obstetrical ward being the exception.

During a recent visit of the distinguished editor of the *ANNALS OF GYNÆCOLOGY* to Montreal, I had the honor of showing him some eight cases of cœliotomy and of allowing him to inspect the wounds, all of which had healed by first intention. They were buried in boracic acid and lightly covered with a gauze pad and a piece of strapping, practically exposed to the air. I also had the pleasure of showing him the list of operations for two years and a half, mostly cœliotomies, with three deaths. I attributed my good results to the care with which I have had the plumbing examined by the above mentioned method every summer before commencing work. At the same time I related the history of a case of puer-

peral fever which was then giving me a great deal of anxiety, but which has since made an excellent recovery, the patient being the daughter-in-law of one of our wealthy citizens living in a new brown-stone house provided with the best of sanitary arrangements, all the plumbing in the bath-room, which was situated next to her bed-room, being nickel-plated and exposed to view. In order to make quite sure that there would be no sepsis, I engaged a nurse who was thoroughly trained in aseptic work, having been present and taken part in at least fifty successful cœliotomies in my private hospital. She had also had a great deal of experience in the maternity. All the abdominal sections that I had performed for six months previously, and even one performed the same day, had recovered without suppuration. I used bichloride 1 in 1000 with a nail brush for my hands, and even then only made two or three digital examinations, although it was the patient's first confinement. I might add that I had not had a rise of temperature in a confinement case for at least three months previous to this confinement. Everything went on well; dilatation was so natural that the finger was never once soiled with blood, and an examination made a month after the confinement showed a cervix absolutely without a sign of a laceration. The head was lifted forward, while the perineum was supported, and the progress of delivery retarded somewhat by means of an anæsthetic, but in spite of this there was a laceration of half an

inch, which was promptly sewed up with one stitch of iodoform silk, and which healed by *prout intentum*. The placenta was gently squeezed into the vagina, when it was easily lifted out intact by the cord and without introducing the finger. A vaginal douche of Condy's fluid was then given, and this was repeated once a day afterwards. The labor might have been called an ideal one. A day or two later there was some trouble with the breasts, although they had been prepared for three months with glycerine of tannin. They cracked, however, and the mother could not bear the baby, nor could it obtain any milk from them. The infant had to be weaned and the breasts were treated with iodide of lead ointment and bandaged, and in a few days were practically healed and soft and gave no further trouble. In spite of the daily douche and free catharsis, the patient's tongue became coated, and its lochia began to have a strong odor, until on the fifth day the patient had a slight chill and rise of temperature, necessitating three douches of permanganate a day, but in spite of this it continued to rise, until it reached 106°. The husband also had a slight rising temperature. I noticed a peculiar smell in the house once or twice, and, on mentioning my suspicions to several others in the house, they all admitted that they had noticed it. I insisted that the sanitary authorities of the city should be asked to test the drainage, as I have nearly always found a defective sewer pipe in these cases, and I could find no

other reason to account for my patient having puerperal fever. This was done with the smoke test, when it was at once discovered that there was a crack in the soil pipe of the water closet just above the floor. The plumbers who had fitted up the house were sent for, and, after testing it themselves, they admitted that there was a leak. This was promptly repaired and the patient gradually recovered, but not until I had curetted and put in several gauze drains and washed out the uterus many times with strong permanganate of potash solution. I need hardly say that the most rigorous precautions as to cleanliness, both of bed, patient and nurse, were observed throughout. I have no doubt whatever that the cause of all this patient's very serious symptoms, and my consequent anxiety, was the escape of bacteria-laden sewer gas into the home and its entrance into the genital tract.

I can recall another case of puerperal fever where the source of infection was clearly traced to defective sewer pipes. This patient had had an ideal labor, and everything was going on well, so that I only visited her every second day, when suddenly without any warning she was taken with a rigor, and, on being hastily summoned, I found the temperature 106°, and the pulse correspondingly high. I used intrauterine douches of permanganate, and gave large doses of quinine, and in a few days her temperature had fallen to normal. I made careful inquiries about the previous history of the house, and found that it had been a hotbed of

diphtheria and scarlet fever for more than a year, and for that reason several families had moved out of it before the expiry of their lease. The health office was communicated with, and then it was discovered that there was a straight flow of sewer gas directly into the house, owing to the absence of a suitable trap.

Moreover, it is the experience of every one who has had anything to do with puerperal fever, and it is also borne out by the figures of the statisticians that this disease is much more common in winter than in summer. The reason for this is exceedingly evident to my mind, viz.: that in summer, when all the windows are open day and night, there may be a great escape of sewer gas into a house, and yet very little harm be done, because the fresh air is constantly blowing through the house and diluting or carrying away the poison as fast as it is being made; while in winter, the doors and windows being securely fastened, sewer gas can reach every part of the house in a more concentrated form. Moreover the hot air from the furnaces and radiators carry the gas toward the upper flats, as was the case in the upper flats of the institution referred to. Also the vacuum caused in the basement by the upward current in the furnaces and chimneys may explain the more ready entrance of this dangerous air.

It is also a noteworthy fact that according to the register general's reports, puerperal fever is at its minimum in August, when all the windows are open, and at its maximum in February, when the doors and

windows are kept carefully closed. The relation of sewer gas to puerperal septicæmia is so well known that it hardly requires any further argument. But as there are still some who do not realize the importance of an annual testing of the plumbing of hospitals and private houses, where women are to be confined or to be subjected to abdominal surgery, I might quote from the last edition of *Flayfair*, edited by Harris, in which this standard author says: "Exposure to sewer gas may, I feel sure, produce the disease. In two cases of the kind I had the opportunity of watching an untrapped drain opened directly into the bed-room, in the one instance into a bath, and in the other into a water closet. Both cases were undistinguishable from the ordinary form of the disease, and in both improvement commenced as soon as the patient was removed into another room." He then quotes Carl Braun, who ascribes a recent mortality in his clinic of 8.87 per cent. to bad sewerage, his wards being in direct connection with the sewerage of the general hospital and near the closets of the adjoining barracks. *Playfair* concludes in the following

terms: "The whole question of the influence of defective sanitary conditions on the puerperal state deserves much more serious study than it has ever yet received, and I have long been satisfied that they have often much to do with certain grave forms of illness in the lying-in state, the origin of which cannot otherwise be traced."

For my own part I would much rather do a cœliotomy in a wood-shed or a hovel where there was no sewer or plumbing of any kind, than in the finest hospital operating room or private house where there was a direct connection with the sewers of a great city, owing to a defect in the plumbing or the syphonage of a trap. I would therefore lay it down as a wise rule to follow that whenever we have suppuration of our wounds or high temperatures after confinements, notwithstanding that we have employed the most rigorous aseptic and antiseptic precautions, we should in every case suspect the plumbing, until it shall have been proved innocent, and for this no test should be accepted as sufficient except the smoke test.

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Parietal Fibro-Myomata of the Uterus, and Professor Vulliet's Operation for their Extraction.

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WHEN assistant in Geneva, I had the good fortune to operate with Professor Vulliet at many of his gynæcological operations, and having witnessed the excellent results of an operation devised by him for the radical treatment of parietal fibro-myomata of the uterus, I thought a paper on this subject might be of interest to my *confrères* here. I will divide this paper into two parts. The first will treat of the ætiology and pathology of the neoplasm under consideration; the second includes the diagnosis and indications for operating, according to the teachings of Professor Vulliet, a description of his operation, and notes on cases treated.

PART I.

What I understand by parietal fibro-myomata are those encased in the wall of the uterus, and neither sub-serous nor intra-uterine. These fibro-myomata may be covered on one of their sides by only the endometrium or the peritoneum. Their clinical physiognomy consists in the fact that they project a little, or not at all, in the state of an independent tumor, into the uterine or abdominal cavity. It is to be noted that I do not report in the cases given in this memoir any cases of

abdominal fibrous tumors that we removed by laparotomy, or those of well-marked intrauterine polypi.

Ætiology. The ætiology of fibro-myomata of the uterus is surrounded by obscurity, as much as is the origin of all other neoplasms. Cambermon (1) attributes the formation of "fibrous bodies" and "polypus of the uterus" to a non-fecundated ovum, continuing to live by its own organic life and transforming itself into a fibroma after passing between the crypts of the uterine walls. Virchow (2) says that the pathological processes of the formation of fibro-myomata must be explained either by an abnormal intensity of local inflammation, as in the case of partial irritation of the mucous membrane gaining on the contiguous parenchyma, or to a debilitated condition of the uterine walls occasioned by constitutional troubles, as chlorosis or local diseases. Winckel (3) and Gottschalk (4) also uphold local and long-continued irritation as a cause. Cohnheim (5) attributes the origin of all tumors to the ulterior development of embryonic germs which have not served for a foetal development. According to this writer there are germs in the uterus capable of developing under the influence of a physiological irritation, namely, preg-

nancy. It is possible that these germs can develop also without this physiological irritation, for it is to be remembered that many fibro-myomata occur in women never having been pregnant, and end in a regular and typical formation. He brings forward the same argument as Cambermon, — that fibroids develop only after puberty, consequently, after the formation of the ovum.

Galippe and Laudowzy (6) sterilized the surface of two fibrous bodies of the uterus and cut them with an aseptic knife. The pieces from the centre, being placed in different culture-media, showed spherical micrococci united two by two in large colonies or in long chains, and also small bacilli, isolated or united two by two, forming long filaments. The uterine fibro-myomata appear to these writers to be the result of a proliferative irritation produced by a micro-organism. The presence of micro-organisms in the tissues is such a common fact that their action can only be determined by isolating them and by their inoculation in animals. If experiments should prove that inoculation produces the formation of a tumor similar to that in which the suspicious organism was found, then only have we the right to attribute a pathological rôle to any one of these minute beings.

Certain peculiarities supporting Galippe and Laudowzy's theory were pointed out at different times by Prof. Vulliet. Some small localities situated at the foot of the Jura Mountains furnished us with a large proportion of the cases treated, while in those coming from other regions to Prof. Vulliet

for uterine troubles the number of fibro-myomata was much smaller. The genesis of these tumors might be explained in the same manner as that of oitre, which centres itself in certain districts and appears also to result from a micro-organism. Further on I shall furnish another argument in favor of this theory.

It is in the prime of life that fibroids develop with the greatest frequency. Gusserow has collected nine hundred and nineteen cases, as follows :

10 years....	1 case	of fibro-myoma.		
14 years....	1	"	"	"
16 years....	1	"	"	"
17 years....	1	"	"	"
18 years....	3 cases	"	"	"
19 years....	8	"	"	"
20 to 30 years....	156	"	"	"
30 to 40 years....	357	"	"	"
40 to 50 years....	338	"	"	"
50 to 60 years....	36	"	"	"
60 to 70 years....	12	"	"	"
70 and above....	5	"	"	"

Winckel, with 527 cases other than those of Gusserow, gives the following table :

20 years....	9 cases	of fibro-myoma.		
20 to 30 years....	98	"	"	"
30 to 40 years....	180	"	"	"
40 to 50 years....	180	"	"	"
50 to 60 years ...	52	"	"	"
60 to 70 years....	6	"	"	"
70 and above....	2	"	"	"

From these tables we see that the maximum of frequency is between thirty and fifty years, and from this period the frequency of the affection decreases progressively towards the two extremities of life. Unmarried life, abstention from coitus, sterility, do not seem to exercise any influence toward the production of this neoplasm, contrary to the affirmation of

certain authors, for they are met with more frequently in married women. Dupuytren (7) was of this idea. Of fifty-eight cases of fibro-myomata collected by him, fifty-four were married, or at least not virgins. Of fifty-one cases, nine women had not been delivered of children. Among nine hundred and fifty nine cases mentioned by Schroeder, Hewitt, Marion Sims, More Madden, Engelmann and Gusserow, we find six hundred and seventy-two married woman, two hundred and eighty-seven unmarried, but not all virgins; and of the six hundred and seventy-two married subjects, four hundred and sixty-four were mothers.

Pathological Anatomy. Anatomically, fibro-myomata are composed of the same elements as those of the muscular layer of the uterus; consequently it is made up of striped muscular tissue and a variable quantity of connective tissue. Bard (8) gives the following description: "The cellular fibers are much elongated, very narrow and striation is hardly evident, if at all so. The nuclei are seen as long, slightly sinuous rods. The muscular nature of these tumors is sometimes difficult to appreciate in sections that have simply been hardened; it is not to be doubted, however, when the cells have been dissociated by the action of a forty per cent. solution of potash. The cells are juxtaposed and are not bound tightly to gether. They remain single or form bundles of only slight thickness, ordinarily woven together, taking every direction possible. Quite often they take on a sinuous form and they rarely remain rectilinear for any length of time. Interstitial connective is only slightly

abundant and may be completely absent. If the connective tissue predominates over the muscular, the tumor is harder, more circumscribed and independent of the organ and less vascular. If, on the contrary the muscular fibres are in greater number, the neoplasm is softer, more diffused and intimately mixed with the uterine muscular tissue, and more vascular."

Virchow states that the sub-mucous type is softer and contains less connective tissue than the sub-serous, but in the numerous specimens that I have examined I have never been able to make this distinction. An anatomical distinction between fibroma and myoma is not admissible, because there is never a complete absence of either of the two constituent elements.

The soft myomatous tumors are much less frequently met with than the harder varieties; they are often single and are generally situated at, or in the neighborhood of, the fundus. It is certain that all fibro-myomata have an intra-parietal origin. They arise in the center of homologous tissue, sometimes near the serous, at others near the mucous membrane, and occasionally in the central zone of the wall. Later, the tumor becomes either sub-peritoneal or sub-mucous or interstitial in type, according to the direction of its growth and the direction in which the contraction of the muscular walls push it. If the external and internal uterine layer are of equal strength, the neoplasm remains indefinitely intra-parietal; but if this equilibrium is disturbed, the tumor will be forced either into

the abdominal cavity or that of the uterus itself, according to the direction of the greater force, and the final result of this migratory action is the formation of a pediculated tumor, which is either sub-serous or sub-mucous. Single interstitial tumors, having developed to a considerable size, may protrude beneath the peritoneum and also under the endometrium, and in a certain sense might be considered sub-serous as well as sub-mucous. This form of neoplasm develops more rapidly than when situated elsewhere, probably on account of its great vascularity, and in its early stage is often in such close connection with the surrounding tissues that the capsule is with difficulty to be made out.

Certain circumstances, I think, retard or prevent migration of the tumor. This is the case in fibromata which are originally soft, because the muscular element predominates over the connective tissue element, and in those which become so often œdematous or undergo some form of degeneration, as well as in diffused fibro-myomata. Lastly, migration cannot take place when the entire uterine wall undergoes a fibroid transformation in such a manner that there no longer exists any contractile force. Every fibroid has not consequently a tendency to migrate. I believe that there is in the parietal contractility an expulsive force, the *vis medicatrix naturae*, by which the organ endeavors to rid itself of the foreign body. Fibroids of the uterus are separated from the walls of the organ by a fibrous capsule; the more apparent, the older the date of the neoplasm, the larger its

size and its richness in muscular fibres. Exteriously it is enveloped by a loose layer of connective tissue, in such a manner that it may be completely detached from the uterine tissue. The vascularization, which depends entirely on the rapidity of the growth of the neoplasm, differs according to the type of tumor.

Garrigues (9) says that fibroids are not so apt to be bound to the peritoneum of the abdominal wall or other organs as ovarian cysts, but that if they do form such adhesions, these are often broad and contain very large blood-vessels, so much so that the neoplasm to a great extent derives its nourishment from the adhesions, and that in course of time may be severed entirely from the uterus and are found attached exclusively to another part of the abdominal cavity. They may even lie loose in the abdomen as necrobiotic masses without forming new adhesions. Fibroids are very frequently accompanied by a local peritonitis, and may also cause cellulitis as well as acites usually of a serous nature; sometimes chylons, rarely bloody.

Hæmorrhage is considerable as long as the sub-mucous tumor is within the cavity of the uterus, but when it is expelled through the cervix in form of the so-called polypus, this symptom may no longer exist, although the pressure exercised by the cervix often impairs the circulation of the neoplasm and a venous oozing ensues. Duncan describes a case in which death occurred from rupture of a venous sinus in an interstitial fibroid; the sinuses were so large that a small crow's quill could be introduced.

The endometrium covering the neoplasm is altered. It is congested, the capillary network is engorged with blood, this being due to the delay of the venous current, a cell hyperplasia takes place with proliferation of epithelium, escape of leucocytes, etc., and this catarrhal condition is quite characteristic of the intra-uterine type. When the neoplasm is very large, the endometrium as a whole is changed. The utricular glands are often profoundly altered by venous stasis occurring in the organ.

Modifications of fibro-myomata. All neoplasms encased in the uterine walls produce symptoms of stagnation in the vessels of the endometrium, as I have already said. These symptoms are the more pronounced the nearer the neoplasm is situated to the uterine cavity. Prof. Vulliet has often found in the uteri which he dilated that, when the endometrium could be traced by the eye as far up as the parietal neoplasm, this membrane was red, swollen and cedematous. It is readily understood how streptococci and staphylococci introduced on to the endometrium in such a condition of congestion could easily produce a real inflammation, and, when this is once installed, it would invade the underlying tissue, the endometritis becoming metritis, and these inflammatory lesions would naturally become more marked in the tissue of the neoplasm, which, on account of its poor vascularization, would offer less resistance than the normal parenchyma. This inflammation can go on to necrosis. But the most frequent cause of inflammation of fibroids is undoubtedly due to traumatism

produced during explorative or operative attempts and pregnancy. According to Gottschalk, long-continued sexual excess, etc., may produce inflammation. (10.) Inflammation of a fibroid must not be confounded with the momentary increase of volume to which they are subject at the approach of menstruation. Pure and simple inflammation is rare, and is nearly always followed by suppuration.

Suppuration. G. Braun (11) observed putrefaction of a fibro-myoma which distended the uterus 17 centimeters. Hecker (12) withdrew by puncture several litres of pus from a so-called ovarian cyst; the autopsy showed it to be a large fibro-myoma. Charles Carter (13) showed at the Obstetrical Society of London a uterine fibro-myoma 8 inches long by 6 inches wide, from a woman of sixty-nine years. In the anterior wall of the neoplasm was found an excavation, from which three pints of pus had issued. Vulliet withdrew by puncture four litres of pus, and a second time by incision about twelve litres. The causes of suppuration of uterine fibro-myomata cannot all be explained with certainty. I could, however, mention cases of purulent discharges in the region of the neoplasm where the putrid inflammation had propagated itself beyond the tumor. Suppuration and breaking down of these tumors have been observed in the gravid uterus. (14.)

Necrosis. In necrosis, spindle-shaped purulent infiltrations exist at the border of the necrosed tissue. As has been stated, traumatism and subsequent entrance of streptococci or

staphylococci is the probable cause of suppurating fibroma, although I have not been able to find reports of bacteriological examinations made of the pus found in these neoplasms. In case X of our series, the purulent transformation took place after a negative electro-puncture. Calculous transformation has also been accused of predisposing the neoplasm to supuration. Necrosis is more often met with in cases of interstitial or sub-mucous fibroids, and is probably the result of pressure exercised upon the vessels round about the capsule, thus lessening or entirely preventing nutrition of the growth, with resulting necrosis. In the sub-mucous type, the endometrium covering the neoplasm is thus often ulcerated and spontaneous enucleation follows.

Cornil (15) has recently demonstrated the presence of zones of necrosis in fibro-myomata in the gravid uterus, having undergone in certain portions a marked softening, situated in the midst of fibrous tissue. These zones of mortification are due to the compression of hypertrophied bundles of muscular tissue in the tumor, and may produce a notable atrophy or even disappearance of a more or less considerable portion of the neoplasm after labor. It is by necrosis of the pedicle, compressed between the lips of the "boutonnière" through which the neoplasm issues that spontaneous detachment of polypi is produced, having passed from the interstitial state to that of a pediculated growth.

Fatty Degeneration. This rarely involves all the elements of the neoplasm. The retrogressive metamorphosis is usually followed by dim-

inution in the volume of the tumor, its consistence becoming more firm because the connective tissue does not undergo any change. This process is met with especially after the menopause or after oöphorectomy. Fatty degeneration, which has been observed during post puerperal involution, may exceptionally end in the total resorption of the neoplasm; sometimes cystic formation results.

Calcification. This transformation is more apt to occur in interstitial and sub-serous fibroids. (16.) It is composed of phosphate, carbonate and sulphate of calcium. It commences in the centre of the growth in a series of isolated bundles, running in different directions and separated by fibrous masses. Calcification may invade the entire neoplasm, and in this case it may become detached and be eliminated by the bladder, rectum or through the abdominal wall. In the advanced stage bone-like masses may form, which old writers look upon as an osseous transformation. Calcification is the consequence of modifications in the nutrition of the tumor.

Carcinomatous and Sarcomatous Degeneration. "Whether carcinomatous degeneration specially affects fibroid tumors is a disputed point." (17.) Several writers, among them Klob (18) and Foerster (19) upheld the view of a carcinomatous transformation taking place in certain fibro-myomata, but it is very possible that these writers were mistaken in their diagnosis and that they had to do with sarcomata proceeding from the connective tissue. De Sinéty (20) says that cancerous transformation of fibroids has been admitted by some

writers, but at a time when histology was in its infancy. He does not think that there exists a single case which can demonstrate this fact, and Klob's writings do not appear to him as at all conclusive. He adds, however, that cancerous infiltration can consecutively invade a fibroid, but this is a question of an invasion and not of a transformation which has never been demonstrated. Carcinomatous degeneration may also be found in uteri from which a polypus has on a former occasion been removed.

Mucous Degeneration. Mucous degeneration is sometimes associated with dilatation of the vessels of the neoplasm. It is characterized by the appearance of abundant liquid in the interstitial connective tissue. This liquid resembles that of œdema, but the microscope shows a proliferation of round cells with a nucleus, and reagents prove the existence of mucin. (21).

Cystic Degeneration. This form of degeneration is incompletely understood as to its origin. There are several varieties. The best defined one is known as *lymphangiectode myoma* (Leopold). It consists in an exaggerated development of the lymphatics of the neoplasm with cystic dilatations. The lymphatics are seen as a series of pockets and sinuses filled with a clear, transparent fluid, which coagulates when exposed to air, and is nothing more than lymph. As they become larger, the pockets may break down and form one large cavity. The characteristic of a cystic cavity of lymphatic origin is that it is lined with endothelial cells, thus

distinguishing it from other kinds of intra-myomatous cysts.

Baraban (22) recently upheld the hypothesis as to an epithelial origin of the cystic cavities of certain cysto-myoma. He examined two small myomata which had developed at the origin of the tube. In these tumors, he found small microscopic cysts, lined with a ciliated cylindric epithelium, much like the epithelium of the tubes, and he considers this the result of an inclusion of the elements of this organ. Baraban mentions the studies of Riedel and Fischel on the persistence of the remains of the canal of Wolff in the muscular tissue of the uterus and vagina; also a case reported by Diesterweg, who found in the interior of a uterine polypus of a myomatous nature a cavity lined with ciliated cylindric epithelium, and he advances the theory that the origin of cystic cavities found in certain cysto-myomata, developed in the walls of the uterus, may be a congenital or acquired inclusion of tubal, uterine or wolffian epithelial elements. The cases cited by Babès, Ruge and Schroeder, in which cysts lined with cylindric epithelium were found in the centre of fibroids, confirm the opinion of Baraban. All cysto-myomata do not enter into the two preceding groups. There are some having only one cystic cavity, with regular walls, lined with little filaments and shreds more or less thick, crossing the cavity in different directions and adherent to the walls, thus dividing it into pockets. The contents of these cysts is a serous, sometimes bloody, occasionally hæmorrhagic liquid. The internal surface of

the cyst shows no trace of epithelium ; in the hæmorrhagic cysts a layer of fibrin, colored with blood, is found. Dilated lymphatics are never found in the neighborhood of these cysts. (23.)

These writers claim that some intramymatous cysts are the result of *cystic degeneration of apoplectic foci* which had occurred in the neoplasm.

Another hypothesis attributes the formation of cystic cavities to the appearance of foci of *granulofatty molecular disintegration*, which may be produced in the centre of large tumors whose nutrition is obstructed. It consists in a necrobiosis with formation of soft, phymatoid masses, which later fall to pieces and give place to cavities filled with a more or less liquid substance (Pozzi). Cystic transformation is found more often in sub-peritoneal and pediculated myomata, and it is admissible that under the influence of an obstructed circulation in the midst of the neoplasm, a stasis with œdema takes place, and later an alteration of the nutrition of the muscular tissue, resulting in their disintegration and liquefaction.

Amyloid degeneration is very rare, only one case being on record and reported by Stratz.

Inflammation of the capsule is ordinarily the result of a lesion of continuity in the endometrium, and easily produces necrosis of the tumor, usually ending in serious peri-uterine inflammation and septicemia. (24). The following statistics from Martin give an idea of the frequency of the different degenerations. Of 201 cases of fibro-myomata he found :

Fatty degeneration.....	10 times.
Calcification.....	3 times.
Suppuration (sub-mucous tumors).....	10 times.
Edema.....	11 times.
Cystic degeneration.....	8 times.
Telangiectasic degeneration..	3 times.
Sarcomatous degeneration...	6 times.

If I have entered at some length upon the pathology of fibroid tumors, it is only to be the better able to explain certain interesting particulars of some of the cases which are to follow.

PART II.

Diagnosis and indications for operation. It is generally not very difficult to recognize the presence of a fibroid, nor to determine its approximate size. It is much more so to determine its situation, consistence, contours, its relations to the walls of the uterus, to estimate the thickness of the tissue covering it. A diagnosis of this degree of exactitude is only possible when the uterus is dilated, so that the interior may be palpated directly by the finger. But even the most careful anatomical diagnosis leaves certain things unknown. It reveals to us what the tumor is at the time of examination, but it does not inform us of its tendency or its future behavior. Only by repeating the examination several times can we elucidate the important question, viz.: if the neoplasm tends to approach the peritoneum or the endometrium. The method of dilatation by progressive tamponing is the only one susceptible of keeping the uterus open for a long enough time to make a series of comparative examinations.

It is to be specially recommended in cases of fibroids of the uterus when an examination is to be made. The other methods of examination usually leave us uncertain on points which are, however, of first importance as regards our therapeutical decisions. Persistent dilatation facilitates topical treatment as well, whether it be electricity or parenchymatous injections of ergotin. Prof. Vulliet is in the habit of giving electricity to all patients that he has dilated, while they are under observation, and this has permitted him to follow by touch the progress of a spontaneous enucleation, determined or accelerated by the electrical currents.

Hæmorrhage. In principle, it may be said that the more a fibroid approaches the endometrium, the more the hæmorrhages that it produces are intense and difficult to stop. Hæmorrhage is generally considered the principal indication for removing, by laparotomy, fibroids that are inoperable by the natural passages. Prof. Vulliet does not believe this. He believes that the hæmorrhages are not due, as many think, to inertia resembling that which occurs after labor. The welfare of the patient may consequently be obtained by means other than the removing of the foreign body that is supposed to produce the perturbation in the uterine contractility. In the first place this inertia has never been proven by anyone; in the second the hæmorrhage appears to be due to a cause materially demonstrated and more simple; in other words it is due to alterations of chronic inflammation, by which the endometrium is always

affected when the fibroid is situated in the neighborhood of the cavity (vascular dilation, stasis, congestion); the uterus bleeds on account of its diseased mucous membrane; inertia has nothing to do with it. Local hæmostatic treatment will usually control even the most serious flowing. A persistent hæmorrhage is a sign that the neoplasm is near the cavity of the uterus, and thus can give us hopes of its extraction by the natural passages, for even in cases where it is completely interstitial, a fibroid growing near the cavity increases the thickness of the walls, so that the tissues behind which it lies can have acquired sufficient height so that when once opened it will give room enough for the neoplasm to be expelled.

Increase in volume of the uterus and compression. If a uterus with a fibroid develops by a gradual and vertical ascension like a pregnant organ, the symptoms are no worse than in the latter condition, but if it grows in the horizontal position, and this is the case usually in fibroids situated in the lower portion of the uterus, symptoms of compression appear as soon as the pelvic walls, nerves vessels, intestine or urinary organs are reached, and indications for a radical operation via the abdomen may become urgent.

Incarceration and malposition of the uterus are points which have not received the attention that they should. Whether they preëxist or come about after the development of a fibroid, they can be the cause of serious and precocious accidents. Posterior deviation and fixations are especially of great danger. Whether

the organ be in retroversion or flexion, the cervix rises behind the symphysis as the tumor grows and the fundus falls into Douglas' cul-de-sac. Under these conditions, both uterus and tumor end by being enclosed under the promontory, and then begin most serious accidents from compression.

When a uterus in this condition is examined, the pelvis is found completely obturated to such an extent that the finger cannot feel the orifice of the cervix up against the symphysis, nor be passed behind the fundus, pressed as it is against the sacrum. These are cases in which it is urgent to act, for a condition of things such as these produces dangerous compression of the intestine and urinary organs. By rendering movable or reducing a uterus thus deviated or fixed, all accidents necessitating a radical operation may be overcome, if by error of interpretation, they are considered due only to the development of the neoplasm. (See cases XI.) Retroversion is a well known complication of pregnancy, and when it occurs in a uterus with fibroid it produces a similar condition demanding the same treatment, viz.: reduction of the organ in its normal direction and accomplished by a kind of massage and taxis. The uterus may also be deviated to one side; this is usually the case when the fibroid springs from the sides and develops between the folds of the broad ligament.

I shall not give a *résumé* of the different operations devised for removal of fibroids nor of their medical treatment, but will immediately describe Prof. Vulliet's operation for

interstitial fibroids. If these tumors are large, they are at once recognized; but, if they are small, their symptoms are not sufficiently characteristic to indicate an examination. However, they are often the cause of insidious hæmorrhages; the menses become more abundant, the patients are anæmic and fall into a condition whose cause cannot be found out unless a careful questioning concerning menstruation is made. Once the attention is drawn to them it is rare that other peculiarities do not show themselves, thus furnishing presumptions in favor of a uterine trouble necessitating a complete examination. The practice of dilating the uterus for searching the cause of lesions of obscure character has often made Prof. Vulliet discover small latent intra-parietal fibroids, and when found they should be removed, because this variety is the one that furnishes the largest specimens of fibroids, that can only be removed by laparotomy when once developed.

As to large interstitial fibroids, they can develop without changing the dimensions of the uterine cavity, and it is in this case that the cavity is too small to allow the extraction of the neoplasm through an incision which would have to be made the entire length of the uterine cavity, and under these circumstances it is better to perform laparotomy. But if the cavity is enlarged so that its depth is in proportion to the greatest diameter of the tumor, it may be removed by the operation that is about to be described. However, when a maximum dilatation has been made, and the tumor is found to be so large that

there is no means of reaching its upper limits with the fingers introduced into the organ, all operation per vaginam is out of the question, for if infection should take place, the impossibility of forced enucleation of the tumor, which is the only thing in such a case, renders the position very dangerous; consequently when the tumor is so large, it is better to perform a laparo-myomectomy at once. Vulliet's operation is composed of three steps: (1) dilatation; (2) "débridement" of the neoplasm; (3) after treatment.

Dilatation. In order to make the diagnosis, dilatation must have been great enough to allow the entire finger to penetrate easily into the cavity of the uterus, and, to operate, still more space is required. If the cavity is not lengthened, dilatation to the necessary degree for the introduction of the index finger and instruments is sufficient. If the cavity is lengthened the index will not be sufficient, and the index and the medius will be necessary in order to enter far enough into the uterus. If the fibroid is very high up in a deep cavity it will be necessary to introduce the hand as far as the root of the thumb. It must be understood that before performing such a dilatation, the physician has tried to utilize the access given by drawing down the organ and pressing on it through the abdominal walls, and, to do this, complete narcosis is necessary. Great dilatations cannot be made in every uterus with intraparietal fibroids, but the greater the sub-mucous surface of the neoplasm, the greater is the possibility of considerable dilatation, this being due

to the special changes produced by the fibroid.

There are cases in which progressive tamponing is alone sufficient means of dilating; there are others where it is necessary to substitute for cotton substances which give a more regular dilatation. Sponge tents or laminaria, such as are found in commerce, are not large enough to dilate the entire depth of very deep uterine cavities. Vulliet uses in certain cases male urethral sounds of laminaria, cut the length of the cavity, several being inserted together. When sponge is to be used, it should be selected for the size of the cavity to be dilated, and should be most carefully prepared. The sponge is cut like a cone. In order to obtain a large dilatation at the fundus as well as the orifice two are inserted; one is introduced, the base being at the orifice, the other is the reverse. Operation should never be performed immediately after removing the cones; the cavity is irrigated and packed with cotton, which is left in place for two days; after this we are sure that the field of operation is sterile. When sufficient dilatation is obtained, the patient is anæsthetized, the uterus is brought down and one or more fingers are introduced to the fundus.

Débridement. The incision ought not to be either a simple scarification or a "boutonniere." To accomplish the end, the direction and length should be proportional to the direction and length of the greatest diameter of the neoplasm, and its depth should be that of the tissues covering the tumor. The direction and length

of the greatest diameter of the tumor are sometimes difficult to establish, but the more one is familiar with intra-uterine examination, the less it is to do. Vulliet has invented a bistoury having a concealed blade. It is introduced like a uterine sound, and, when brought to the upper limits of the tumor, the blade is pushed out to the desired length. The end of a finger is placed over the back of the instrument, a counter-pressure is made over the abdomen with the free hand, and the incision is made from the top to the bottom limits of neoplasm; this done, the blade is hidden, and the instrument withdrawn. It is not well to incise the capsule of the tumor, for as long as the fibroid is not opened, necrosis is not to be feared.

The ideal operation consists in producing a gradual descent of the tumor towards the uterine cavity, and not in bringing about its immediate expulsion out of the walls. It is a fact that fibrous polypi, which are enucleated and delivered spontaneously without opening of the capsule, are those which cause the least trouble. It is better to try débridement two or three times rather than go too deeply the first time. The higher up the fibroid, the greater must be the precautions. When a knife such as has been described is not at hand, a button-pointed one may be used; the blade is covered by adhesive plaster so that only the end of the blade is exposed. Sometimes long scissors, curved on the flat, may be used, and they are necessary when the tumor projects irregularly into the uterine cavity; the incision is then

made from the lower to the upper limits as far as possible. When dilatation is such that the interior of the cavity may be seen, the incision, which is not painful, may be done without narcosis. Débridement causes quite a hæmorrhage, but this is of short duration. This fact may astonish those who do not know the hæmostatic effects of scarifications in cases of loss of blood due to a fibroid. After débridement, a long intra-uterine irrigation of some disinfectant, the cavity and vagina are packed with iodoform gauze and the patient put to bed.

After-treatment. On the next day ergotin is given and electricity applied. The packing is renewed every forty-eight hours. Neither the finger nor foreign body excepting the cotton and the irrigator should be introduced into the uterine cavity. Three eventualities can happen after incision: First, enucleation is immediately done; secondly, the endometrium unites and the tumor slowly develops into a polypus protruding into the uterine cavity; and lastly, no modification may take place, the neoplasm remaining in the same position. The length and depth of the débridement, the more or less intimate connections of the neoplasm with the muscular layer of the organ, the consistence of the fibroid, the degree of contractility of the external layer, are certainly the circumstances which determine the final result of the operation. Enucleation is generally announced by characteristic pains of labor; if there is no indication of infection, the ex-

pulsion should be allowed to continue without any interference on the part of the surgeon. When the efforts of the uterus are thought to be exhausted, a digital examination should be made. After such a labor, so to speak, the neoplasm will be found at different degrees of descent; sometimes it is partly in the vagina, at others it may not have passed the external orifice, and Vulliet has also found it engaged between the lips of the incision. Complete enucleation has never been seen to occur at once; ordinarily the parts expelled are adherent to the remainder of the tumor buried in the walls of the uterus, and it is necessary to intervene in order to complete the expulsion.

Elimination may also take place in the form of shreds, separated from the rest of the neoplasm, and these are generally flattened discoid masses with even edges. Separation takes place in the cellular tissue which unites the islands which form the whole of the tumor. With good asepsis and intra-uterine irrigations and dressings, the organ can be kept from all contamination. In two cases in which the tumor took three weeks for its elimination, no fever, bad smell or any sign of decomposition was noted. Prof. Vulliet has seen enucleation commence the day following debridement, and it may not commence before six, eight, fifteen and even twenty-one days later. If at the end of three weeks no symptoms has been observed, it is probable that the incision has closed and that elimination will not take place in this manner.

Polypus Formation. Even if no shreds have been passed at the end of three weeks, the surgeon should not be discouraged at the result of his incision, for the growth can still pass into the uterine cavity surrounded by the mucous membrane and transformed into a polypus. The incision closes, but the weakness of the deep layers remains. The incision has thinned it, and consequently the growth may advance towards the cavity of the uterus. This fact is illustrated in case V.

Negative Result. Vulliet has incised the mucous membrane when this was in sight, and he was able to make the incision the necessary length and depth, and in spite of this the fibroid did not budge from its place. Had the external layer lost its contractility, or were the connections between the growth and the walls too intimate? This is not possible to determine. Vulliet thinks that fibroids are subject to œdema or degeneration, that all those not possessed with a slightly greater consistence than the uterine wall do not undergo sufficiently the effect of the contractions, and it is to this that he is inclined to attribute negative results. But in this last category of cases he has never regretted the incision, for in all his cases he has obtained a diminution, and in some even complete cessation of the hæmorrhages, as well as an arrest of development of the neoplasm.

Contra-indications. This procedure is absolutely contra-indicated in all cases in which the dimensions of the growth are such that an incision the entire length of the uterine cavity is

not large enough to allow the production of spontaneous enucleation. Also, even when the uterine cavity is large enough to permit of a sufficiently long incision, the upper limits of the tumor are too high up in the abdomen, thus preventing forced enucleation in case commencing infection might appear. And lastly, any symptom indicating a virulent process in the uterine cavity is an absolute contra-indication.

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(To be continued.)

Pelvimeters, and the Practice of Pelvimetry as a Means of Discovering Irregularities of the Pelvis which are Likely to Embarrass Parturition.

PHILANDER A. HARRIS, M. D.

PATERSON, N. J.

It is probably safe to assert that of the women now pregnant one or two of every thousand have pelves so small, flattened, or otherwise distorted, as to render it impossible for their children to be born alive at term in the natural way.

It may be further said that of every one thousand cases now pregnant, there is an additional small group possessing sufficient pelvic contraction or deformity to arrest the progress of the child, who may be delivered only by the aid of the forceps.

In the first group of cases foetal and maternal mortality will figure in large proportion, except for the timely intervention of art. In the second group foetal and maternal injury and mortality are again likely to figure, although the embarrassments consequent to failure and unskill may be less pronounced than in the first or more limited group of cases.

Those who have intentionally mutilated or destroyed children to effect delivery have, with few exceptions, acquired a most pronounced feeling of repugnance and disgust for such procedures. Fortunately modern art has brought most encouraging relief to these unfortunate women, and there is consequently less excuse for us to soil our hands with the blood of unskill and disgrace. Modern art,

indeed, has so greatly enhanced the possibilities of both maternal and foetal safety, that we should well consider the means whereby these unfortunates can be discovered in time to be saved.

A very large proportion of the cases of Cæsarean section and symphysiotomy present a previous history of unsuccessful, and often repeated, attempts at delivery by the forceps. These are the cases which have swelled the mortality percentages of pubic and abdominal section. In many of them only failure to effect delivery by the forceps revealed the presence of osseous impediment to delivery, or established the necessity for resort to other measures. The maximum degree of maternal and foetal safety depends upon our early discovery of these deformities.

Our duties in this relation should be remembered at our introduction to each case. Women whom we shall then find to have given birth to small children only, who present the history of long labor, especially of a prolonged second stage, or, who have been delivered by version or the forceps, should be at once, or at our early convenience, subjected to at least the common external measurements of the pelvis.

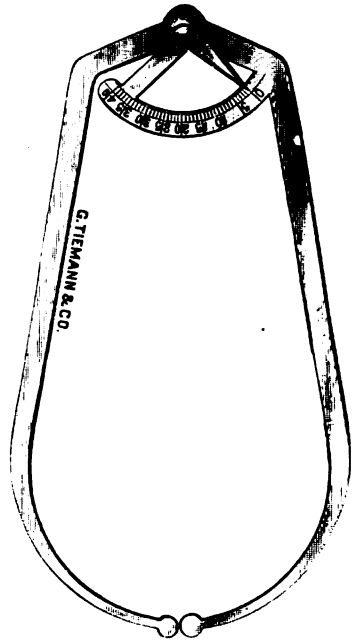
External measurements of all primiparæ should be carefully made

when our services are engaged, or shortly thereafter. For the purpose of making these external measurements of the pelvis, calipers, or the pelvimeter, are indispensable. In former times the English inch was the only unit of measure for pelvimetry in this country. At present I believe a majority of the obstetrical teachers and writers here prefer and employ the French centimetre as a unit of measure, and its extensive employment in other countries should lead to its general adoption here. Many continue to "think," as they say, "in inches." Such may be reminded of the following simple method of reducing inches to centimetres: Multiply the number of inches by ten, divide the product by four, and the result is centimetres. Thus: $7\frac{1}{2}$ inches $\times 10$, divided by 4, equals 18.6 cm.

To reduce eighteen and six-tenths centimetres to inches, multiply by four and divide the product by ten, and the result is seven and one half inches. Thus: 18.6 centimetres $\times 4$, divided by 10, equals $7\frac{1}{2}$ inches.

In the selection of a pelvimeter certain qualities are requisite: First, accuracy; second, that the instrument shall span sufficiently to take the various measurements of stout women. Two or three of the instruments in my collection are markedly deficient in this latter quality. An intimation of their deficiency in this respect is clearly shown by the accompanying illustration.

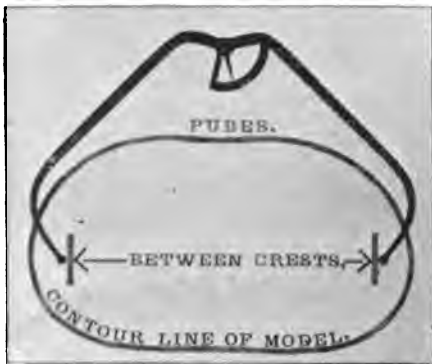
Almost any pelvimeter will span to the iliac crests or spines by anterior or posterior approach, but not so when we attempt to take the external conjugate.



The seductive little instrument of Collin, and also that of Robert and Collin, as sold here, do not span sufficiently to measure the external conjugate in stout women. Flattened pelvises in such women—the very ones we must determine—only increase the incompetency of these instruments.

Neither the arm, nor any part of the instrument, except the points, should exert pressure upon the patient.

For the purpose of studying and comparing the spanning capabilities of the various pelvimeters in my collection, I have secured the contour of a stout patient, and reproduced it, life-size, on accompanying drawing. It was obtained by moulding a lead tape to the patient, on a line corresponding with the projection of a plane, which intersected the body at the lumbo-sacral joint posteriorly.



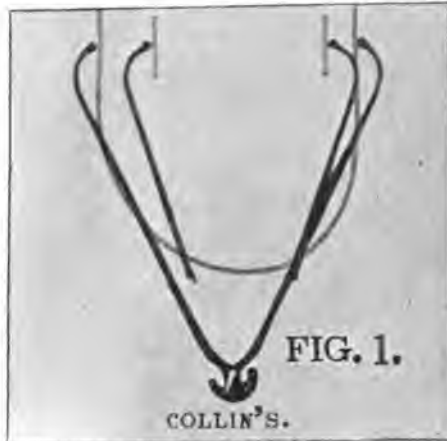
and near the upper border of the symphysis pubis anteriorly. The distance around the patient on the contour line was one hundred and one centimetres. She weighed one hundred and eighty-five pounds, and was of the following general dimensions : —

Height.....	161.5 cm. = 5 ft. 4½ in.
Shoulders.....	39 cm. = 15½ in.
Crest iliac.....	31 cm. = 12½ in.
Iliac spines.....	28 cm. = 11½ in.
External conjugate.....	21 cm. = 8½ in.
Internal trocha.....	39 cm. = 15½ in.

The reproduction of this patient's contour — life-size — on a number of cardboards, and the application and tracing of the several pelvimeters all in position for taking the external conjugate, and, of course, open to twenty-one centimetres, affords a ready means of comparing the form, size, and spanning capabilities of the various instruments hereafter delineated. The illustrations are all photolithographed from the original tracings, and are thus relieved of any suspicion of error.

The relations of the various instruments to a stout person with a large, but flattened, pelvis, is illustrated by tracings of the several pelvimeters

with points approximated to fifteen centimetres. Only a portion of the arms of the various instruments appear in this part of each drawing.



Figures 1 and 2 represent the pelvimeters of Collin, and of Robert and Collin, instrument makers, Paris.



These instruments were made in New York; they span insufficiently, and must, on that account, be condemned as universal external pelvimeters. Both are graduated from taking internal diameters. The expression of measure is in *centimetres*.

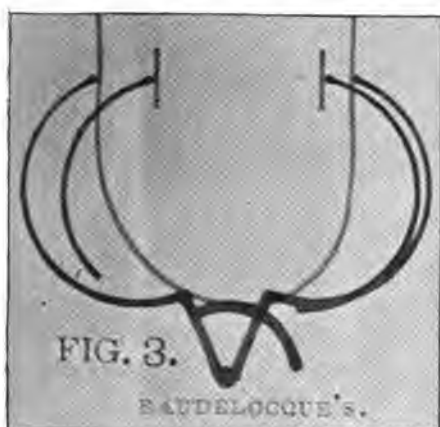


Figure 3 represents a pelvimeter of Baudelocque in my possession. It spans insufficiently.

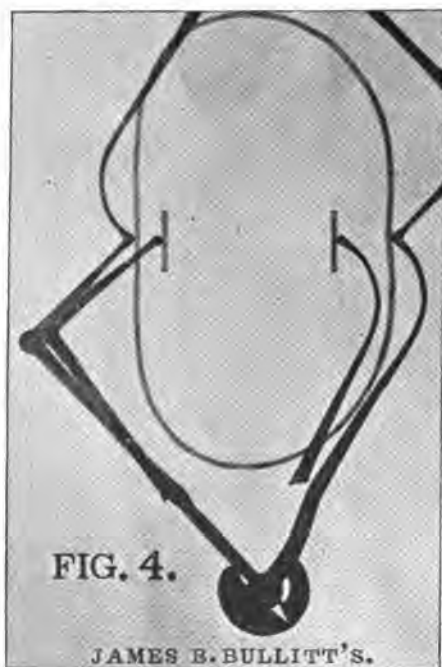


Figure 4, representing the instrument of Doctor Bullitt, seems a good deal short in spanning, but the shortage might, to some extent, be overcome by applying it upside down, or

from the other side, in individual cases. The relation of the arms thus applied to model is shown in the accompanying illustration. This very ingenious instrument is adapted to certain internal measurements. I have not used the instrument for internal measurement, and am therefore unable to judge of its merits for this service.

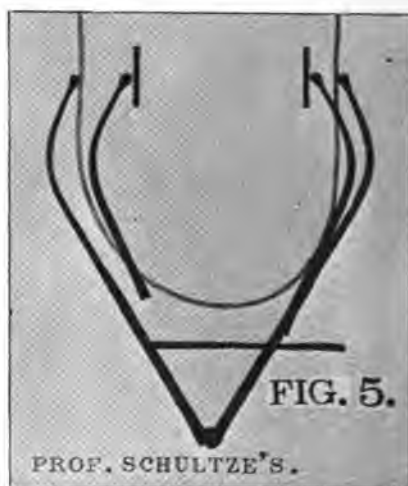


Figure 5, or the instrument of Schultze, is short in spanning effect, but will measure most cases.

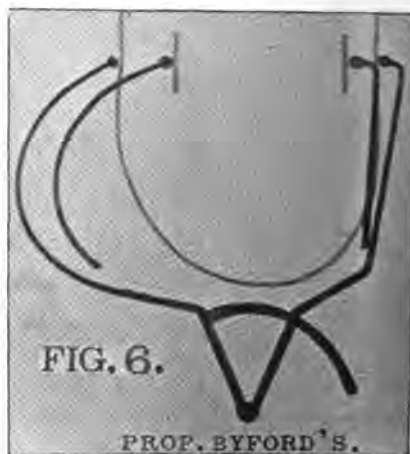


Figure 6, Dr. Byford's pelvimeter, spans sufficiently.

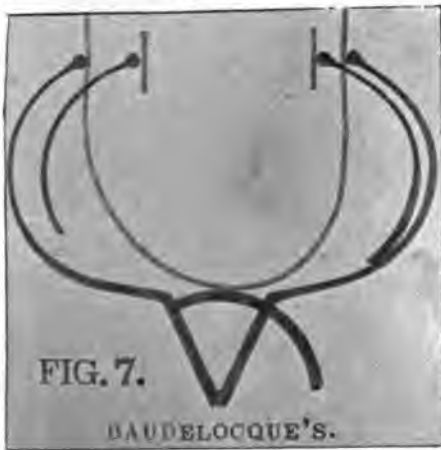
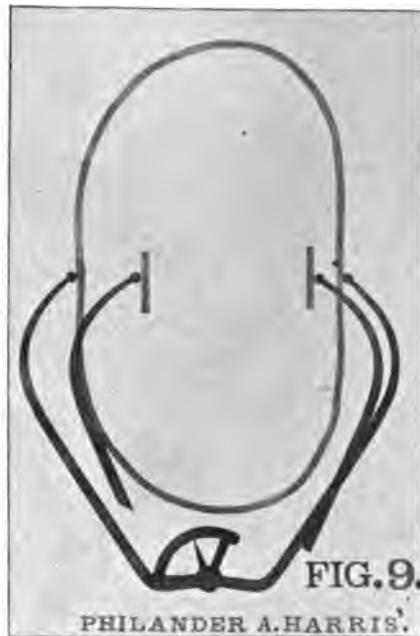


Figure 7, of true Baudelocque type, but larger than figure 3, spans amply.



Figure 8, representing Dr. Davis' improved pelvimeter, spans very amply.

Figure 9 represents the reader's instrument. Its general conformation has not been altered since the first one was made eighteen months



ago. It registers in centimetres. Its points are dis-shaped, that being regarded as the best form for holding between the thumb and first finger during mensuration.



Figure 10 represents Dr. Herman L. Collyer's recent invention.

In addition to the necessary qualities of accuracy and spanning we

should select an instrument possessing as many other good attributes as possible.

WEIGHT.

Dr. Bullitt's pelvimeter weighs..	400	grammes.
Dr. Baudelocque's " "	309	" "
Prof. Schultze's " "	279	" "
Prof. Byford's " "	252	" "
Prof. Davis' " "	220	" "
The author's, in steel " "	195	" "
" " " aluminum " "	97	" "
Dr. Collyer's " "	229	" "

RECTANGULAR AREA OCCUPIED BY CLOSED INSTRUMENT.

Baudelocque's.....	111	square inches.
Byford's.....	103	" "
Davis'.....	84	" "
Bullitt's.....	43	" "
The author's.....	40	" "
Collyer's.....	39	" "
Schultze's.....	35	" "

THE THICKEST PART OF

Collyer's measures	32	millimetres.
Schultze's "	31	" "
Baudelocque's "	27	" "
Davis' "	26	" "
Bullitt's "	26	" "
Byford's "	25	" "
The author's "	16	" "

BAUDELOCQUE'S CLOSED INSTRUMENT MAY BE PUT IN A RECTANGULAR BOX OF 139 CUBIC INCHES CAPACITY.

Byford's... ..	in 111	cubic inches capacity
Davis'.....	87	" " "
Bullitt's.....	44	" " "
Schultze's.....	44	" " "
Collyer's.....	43	" " "
The author's.....	26	" " "

Bullitt's pelvimeter has many distinct parts; Davis' has seven, with antiseptic lock.

Baudelocque's.....	6	parts (screw pivot).
Schultze's.....	6	" " "
Collyer's.....	6	parts (thumb-screw pivot).
Byford's.....	4	parts (screw pivot).
The author's.....	5	" " "

Of the competent instruments in my collection,

Byford's registers in inches and half inches.					
Davis's....."	"	"	"	"	"
Baudelocque's"	"	"	"	"	"
Schultze's...."	"	"	"	"	"
Bullitt's in centimetres.					
Collyer's in both inches and centimetres.					
The author's in centimetres, but may be obtained to read in inches.					

Baudelocque's pelvimeter has a screw with which an assistant can set the points at any degree of separa-

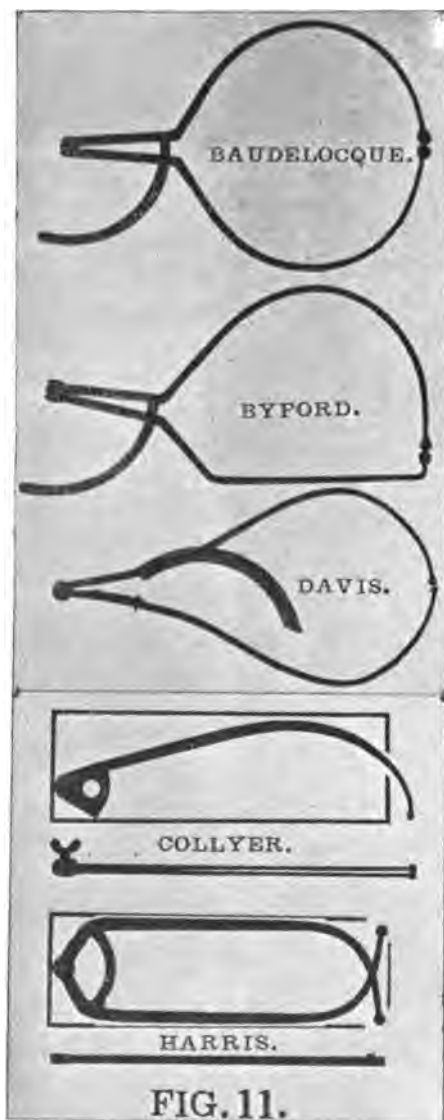


FIG. 11.

tion. This permits the mensurator to remove it to better light, or examine it at leisure. This feature also characterizes the pelvimeters of Professors Byford, Davis and Schultze.

The pelvimeters of Bullitt, Collyer and that of the reader are in no instance provided with set screws, but the graduations are legibly marked, and may be easily read by the smallest candle light during application.

Lately much has been said about pocket pelvimeters. In addition to the weight and dimensions above given, I wish to direct attention to figure 11, in which are delineated the fully-closed and amply-spanning instruments.

Schultze's pelvimeter (the one in my possession), like the two lowermost ones shown, is a pocket pelvimeter, but it spans insufficiently, and can only be employed in some cases by perineal approach.

The external measurements of the pelvis of special value, and with which this paper mainly deals, are:

First. The greatest distance between the iliac crests and their external margins.

Second. The distance between the external margins of the anterior superior spinous processes of the iliac bones.

Third. The so-called external conjugate, or the distance between the fossa beneath the spinous process of the last lumbar vertebra and the middle of the upper border of the symphysis pubis.

Taken from life in the normal pelvis of average size, these three measurements should be about as follows:

Between iliac crests.....	28 centimetres.
Between iliac spines.....	25 "
External conjugate.....	20 "

The internal conjugate of such a pelvis, or conjugata vera, or distance between promontory of sacrum, and the posterior surface of the symphysis pubis, should be about eleven and five-tenths centimetres, leaving eight and five-tenths centimetres, which is made up of sacrum, pubes, and overlying structures.

For the purpose of approximate estimation of the conjugata vera, from the conjugata externa, some authors have suggested that a certain fixed deduction should be made for sacrum, pubes and overlying structures. Baudelocque, for example, mentioned seven and five-tenths centimetres for spare, and eight and two-tenths centimetres for women of fleshy habit; Litzmann made measurement of the pubes of thirty women, post-mortem, with the result that the mean amount to be deducted from the external conjugate for sacrum, pubes and overlying structures, should be eight and six-tenths centimetres. He remarked, however, that the amount in individual cases varied widely, owing to the difference in the thickness of the bones and integument, the maximum amounting to nearly twelve centimetres, while the minimum did not reach eight centimetres.

To say that we may, for the purpose of brevity in expression, convenience in estimation, or for any other reason, suggest that a certain fixed deduction shall be made from the conjugata externa, to obtain the conjugata vera without regard to the size of the pelvis, appears illogical,

and I am sure will prove misleading. To avoid error and misapprehension regarding the relation of the conjugata vera to the conjugata externa in pelvis of normal conformation, I desire to emphatically exclude suggestion that any given number of centimetres may be deducted in all cases to arrive at a result.

A symmetrically formed and anatomically correct pelvis, with an external conjugate of twenty two centimetres, measured in life, should have a conjugata vera of twelve and five-tenths centimetres. The deduction, in this instance, from the external conjugate amounts to nine and five-tenths centimetres. The deduction for sacrum, pubes and overlying structure in a similarly formed pelvis, having an external conjugate of sixteen and five-tenths centimetres, would be seven centimetres, while the deduction from an external conjugate of twenty centimetres would be eight and six-tenths centimetres, making a conjugata vera eleven and four-tenths centimetres. These external measurements are made with slight, but not painful, pressure of the points of the pelvimeter during reading.

A deduction of one centimetre from the external conjugate should be made for obesity, and at least two centimetres for very pronounced obesity.

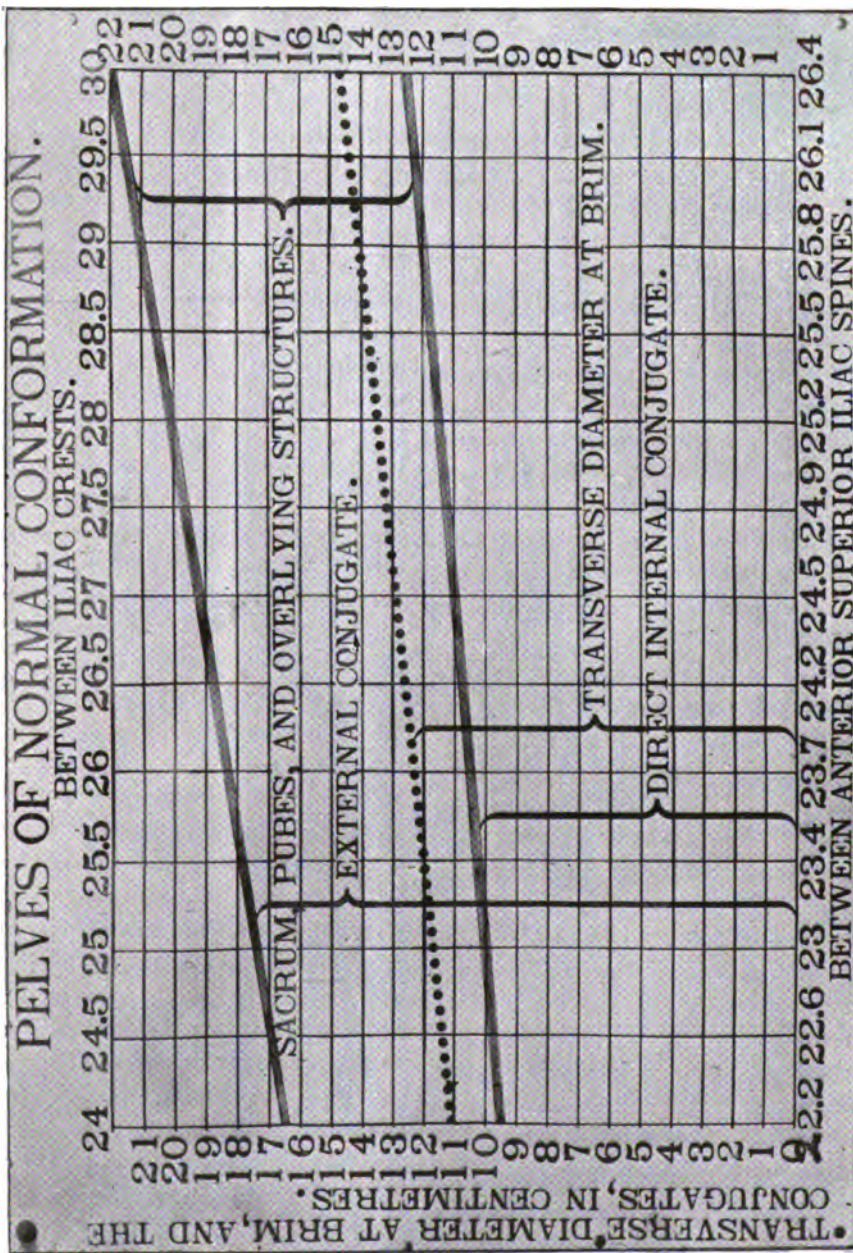
A deduction from inter-crest and inter-spinal measurements, amounting to five-tenths centimetres or one centimetre is all the allowance which need be made on account of obesity or very pronounced obesity respectively.

For the purpose of illustrating the

relations which these three common external diameters bear to one another in pelvis of normal conformation, I wish to direct attention to the accompanying chart, marked "Pelves of Normal Conformation."

The space between any two horizontal lines represents one centimetre, the figures at the left and the right, reading from zero, indicate the number of centimetres for antero-posterior measurements. At the top of the chart there appears a progressive series of numbers, any one of which may be utilized for an iliac crest measurement. The lines which descend from these numbers terminate at the bottom of the chart where another progressive series of figures indicate the several companion measurements for the anterior superior spinous process of the ilium. The average difference between inter-crest and inter-spinous process of the ilium, with a crest of twenty-four centimetres is about one and eight-tenths centimetres, while the difference between these companion measurements with an inter-crest distance of thirty centimetres is about three and six-tenths centimetres. Here again the distances between companion measurements are seen to vary according to the size of the pelvis. Any point of the gradually ascending upper broad line, beginning at sixteen and five-tenths centimetres on the left, and terminating at twenty-two centimetres on the right, may be taken to represent a conjugata externa of any particular case. The intersecting vertical lines lead to the corresponding inter-crest measurement at the top, and to the inter-iliac spine

at the bottom; while the horizontal The broad ascending line of the intersecting lines lead to the cor- chart, beginning at nine and five-



responding measurement for the external conjugate.

tenths centimetres on the left, and terminating at twelve and five-tenths

centimetres on the right, is intended to show the conjugata vera in pelves of varying sizes, according to its intersection with any descending line from the intersections above. The other broad ascending line, beginning at sixteen and five-tenths centimetres, on the left, and terminating at twenty-two centimetres on the right, is intended to show the conjugata externa of the pelves of varying sizes, according to its intersection with any two lines, one of which must be horizontal and the other vertical.

The gradually ascending dotted line, beginning at eleven centimetres on the left, and terminating at fourteen and seven-tenths centimetres on the right, is intended to demonstrate the transverse measurement of any particular pelvis according to its intersection with any vertical line in interest.

Let us make practical application of this table by assuming that we have measured a pelvis with an intercrest distance of twenty-eight centimetres. Follow this line to the bottom of chart, where we read that the companion interiliac spinous measurement should be twenty-five and two-tenths centimetres. This descending line intersects the external conjugate line at twenty centimetres above zero. The intersection of this line, descending from twenty-five centimetres, with the dotted line, affords the transverse measurement of about thirteen and five-tenths centimetres. By following this descending line to its intersection with the lower broad ascending line, we shall find that the internal conjugate should be about eleven

and five-tenths centimetres. Let us suppose that we have a pelvis with an external conjugate of eighteen centimetres. Allow the eye to follow the horizontal line on chart until it intersects the upper broad ascending line. From that point the ascending line carries us to the iliac-crest measurement at the top of the chart, which is twenty-five and five-tenths centimetres, and to the bottom of the chart, where the distance between the anterior superior iliac spines is found to be twenty-three and four-tenths centimetres. Marked deviation from the indications of these converging and intersecting lines is a presumption of asymmetry.

The deduction for sacrum, pubes, and overlying structure is readily determined from the chart by counting the centimetre spaces on any vertical line between its intersections with the two broad ascending lines.

I believe that the chart is laid out on lines sufficiently in accord with nature to render it useful and fairly reliable as a reference table, to determine the relations which certain pelvic measurements should bear to one another in such as are of fairly normal anatomical form and symmetry. While a large proportion of all pelves in their transverse and antero-posterior diameters will quite nearly exemplify the relations indicated by the chart, yet the size of the pelvis in many individual cases will be found quite out of proportion to the height of the individual. For example:—

CASE A.

Height	147	centimetres.
Crest	27	"
Iliac spines	24.5	"
External conjugate	19	"

CASE B.

Height.....	172.5 centimetres.
Crest.....	27 "
Iliac spines.....	24.5 "
External conjugate.....	18.8 "

These pelves of apparently normal conformation have about the same diameters, yet one is that of a short, and the other of a very tall woman.

While the ratio of proportion between the size of the pelvis and the height of the individual is generally maintained, the instances of relative disproportion are sufficiently numerous to deter us from concluding that the pelvis of any woman is amply large because she is tall in stature.

Certain terms, such as "generally contracted pelvis," "aequabiliter justo major pelvis," are employed partly to designate — inferentially, of course — the sizes of pelves. Dimensions have been so infrequently quoted in connection with the employment of these expressions, that the greatest latitude of interpretation is possible. The use of the expression "contracted pelvis" has been subjected to a variety of, and, in some unusual instances, definitions. To the ambiguity of this expression, rather than to differences of experience or observation, is to be attributed, no doubt, the conflicting statements regarding the frequency of this so called condition. In my chart of "Pelvis of Normal Conformation" I have introduced, in the gradually ascending scale of distances between the anterior superior iliac spines, tenths of a centimetre. These divisions of a centimetre, as you will observe, are necessary for mathematical approximation, and I mention the fact that no one may attribute to me impossible mensuration.

Not all pelves whose external diameters are in close keeping with the indications of the chart will be found to have the exactly corresponding internal diameters. The thin, delicate structure of some pelves, and the generally thickened formation of others, affords a certain latitude of variation. The degree of latitude, however, will not be considerable. So soon as the relative disproportion becomes marked, we shall find that one or other of the external diameters is out of its proper relation with the other diameter. In just this particular does external pelvimetry afford valuable and almost unerring intimation of asymmetry.

The following case is especially illustrative of the value of pelvimetry, because opportunity was offered for internal measurement at autopsy:

CASE C.

Crest.....	29 centimetres.
Iliac spines.....	29 "
External conjugate.....	19 "

At autopsy, when post-mortem symphysiotomy was performed, the following internal diameters were taken: —

Direct internal conjugate.....	6.3 centimetres
Transverse.....	13.8 "

In this case I claim that the increased distance between the iliac spines afforded most pronounced indication of asymmetry.

A friend who recently performed Cæsarean section upon a young woman with narrowed pelvis, kindly afforded me the opportunity of taking the following measurements:

CASE D.

Crest.....	23.5 centimetres.
Iliac spines.....	21.5 "
External conjugate.....	18 "

AT AUTOPSY.

Internal conjugate.....	10.1 centimetres.
Transverse.....	10 2 "

I claim that the relative lengthening of the external conjugate in this case, or the relative shortening of the inter-crest measurements, afforded sufficient presumption of asymmetry at the pelvic inlet. It was a small pelvis, and far from normal in its conformation.

Another case (E), a handsome young woman, with broad hips, presented the following parturient history: First labor, very prolonged second stage, instrumental delivery with dead child weighing seven and one-half pounds; second labor, prolonged second stage, delivery of a living child weighing six and one-half pounds, without instrumental aid; third labor, head rested at the superior strait, instrumental delivery of a living child weighing seven pounds.

Crest.....	27 centimetres.
Iliac spines.....	22.5 "
External conjugate.....	17.5 "

In this instance, one might assume the inter-crest diameter at fault, since the relation of the inter-iliac spine to external conjugate is correct. However this may be, it is sufficient to note that the external measurements indicated internal asymmetry. An external conjugate of seventeen and five tenths centimetres does not be long to a crest of 27 centimetres.

Another case (F), probably rachitic, with the following parturition

history and pelvic measurement: First labor, instrumental delivery of a dead child after a prolonged second stage, attended by a professional friend of mine; second labor, delivery without instrumental aid, after a short second stage, of a living child weighing five and one-half pounds; third labor, instrumental delivery of a living child weighing seven pounds; fourth labor, instrumental delivery of a living child weighing seven pounds. This woman was attended by the reader in all but her first confinement, and her three children born alive are still living.

Crest.....	26 centimetres.
Iliac spines.....	25.5 "
External conjugate.....	17 "

Comparison of these diameters with the indications of the chart, shows that no two measurements are right in their relation to each other.

Another case (G), probably also rachitic, with the following parturient history; Prolonged second stage, head arrested at brim, delivery with the forceps of a dead child weighing eight pounds.

Crest.....	27 centimetres.
Iliac spines.....	26 "
External conjugates.....	21 "

Here again the measurements are not in accordance with the indications of the chart.

Case A, at the age of twenty-seven, after a labor of two days, was delivered by the forceps of a living child which died in nine weeks. In her second labor she gave birth, unaided, to a smaller child, weighing six or seven pounds, which lived to sixteen

months, and died of diphtheria. The labor of her third child-bed lasted seventy-two hours; this child born without forceps is still living. The weight of this child is believed to have been between seven and eight pounds. Fourth child-bed, chloroform, forceps, and a dead child in nine hours from beginning of labor. Fifth child-bed, labor began at 2 A. M. on the fifth of the present month, membranes spontaneously ruptured two hours later; second stage began at 6 A. M. Anæsthesia and application of forceps by her physician before noon. Another unsuccessful effort with forceps by a consultant at noon. At request of the attendants, I saw the woman at 2 P. M. Head above the brim, L. O. A., large caput succedaneum, pains very powerful and in quick succession.

DIMENSIONS.

Weight.....	185 pounds.
Height.....	158 centimetres.
Crest.....	29 "
Iliac spines.....	27 "
External conjugate..	20 "

CORRECTION OF MEASUREMENTS ON ACCOUNT OF OBESITY.

Crest.....	23.3 centimeters.
Iliac Spines.....	26.8 "
External conjugate...	18.0 "

This patient was at once removed to the Paterson General Hospital, where I performed symphysiotomy at half past five o'clock. Upon withdrawal of the ether her pains almost immediately recurred, and, without further aid, effected the delivery of a dead child weighing ten and one-half pounds (nude) in less than ten min-

utes after pubic section. Conjugata vera was found to be seven and six tenths centimetres. As this is the first report of this case, I wish to state, apologetically, of course, that although unable to discover fœtal heart sounds, the patient experienced fœtal movement one hour before operation. She had not, however, with this exception, felt fœtal movement for about nine hours before operation. The child's left eyelid was swollen, and ecchymosed, but, aside from this, no other external marks of injury were discoverable. This case further exemplifies the claim that even moderate variation from the typically normal, afforded decided indication of asymmetry.

I will not weary you with further reference to notes in this relation. I have introduced these cases to show that in every instance one or other of the external diameters were markedly out of their normal relation with one or both of the other diameters.

In addition to the three common measurements already considered, there are two additional measurements which are important in the detection of pelvic asymmetry. They are the distances between the posterior, superior, spinous process of the iliac bone on the right side, and the anterior, superior, spinous process of the ilium on the left side, and the corresponding companion measurement from left to right generally referred to as the right and left oblique. These measurements, in pelves of normal conformation, are equal. Inequality of these companion measurements indicates lateral deflection or pelvic obliquity.

I can conceive the possibility of deformity of the pelvic inlet, of which common external pelvimetry might fail to excite suspicion, but I believe that such cases are so rare that they will form but a very, *very* small percentage of the whole number of pelvic deformities which embarrass parturition.

In earlier experience I committed error, in some instances, by pronouncing flattening when none existed. Flattening of the pelvis, or shortening of the conjugates, must not from external mensuration be assumed to be present in any case until we have determined that the transverse measurements are disproportionately long. If the chart of pelves of normal conformation here shown is constructed on lines in close accordance with nature, it must then be clearly apparent that many others have committed the error which I have just confessed. No pelvis can be said to be flattened until one or other of the transverse measurements are also determined.

A pelvis with the following measurements

Crest.....24.5 centimetres.
External conjugate....17 “

is a normal pelvis so far as these two measurements can determine, but a pelvis with crest of twenty-eight centimetres and an external conjugate of seventeen centimetres is a flattened pelvis.

It has been generally considered that relative widening of the distance between the iliac spines indicates the rachitic pelvis, and with a relatively shortened conjugate, a

rachitically flattened pelvis; while a wide crest, and relatively shortened distance between iliac spines, and the external conjugate, relatively shorter than the inter-crest measurement demands, indicates the non-rachitically flattened pelvis. As between these two varieties of flattening at any particular degree of distortion, as indicated by external mensuration, I have no hesitancy in asserting that the so-called rachitically flattened pelvis will present the greater degree of osseous impediment to parturition.

Having discovered, by external pelvimetry, a very small pelvis, or one presenting indication of pronounced asymmetry, how may we render such knowledge of advantage to our patient? Vaginal exploration is clearly the next step; such exploration is the important test which science must interpose. With the patient anæsthetized, the promontory of the sacrum can generally be reached by the index or second finger, especially with the hand in the vagina. We thus determine the conjugata diagonalis, and make such deduction from its measurement in individual cases as may seem proper to obtain the conjugata vera.

The fingers may be directed to the right and to the left, and such knowledge gained of the transverse and oblique diameters as is possible. The size and shape of the sacrum and its promontory, the formation of the pubes and the approximation of the tubera ischii, will appear for estimation, and, most important of all, the location and position of the head, if it presents. If, in labor the os is found fully dilated, the membranes rup-

tured, the pains active, and the head above the pelvic inlet and not descending, we have most substantial proof of the relative disproportion of child and pelvis.

While, by means of external and internal pelvimetry, we may reckon almost to a nicety the size and formation of almost any particular pelvis, we have, as yet, made but little progress toward determining the size of the unborn child.

Living children have been born through flattened pelves, whose conjugata vera did not exceed seven centimetres. Case C, referred to in this paper, gave birth to four living children prior to her death in the last parturition. It is needless to say that these children, and all born under like circumstances, were at least small, and probably much beneath the average size of birth.

Resort to unusual operation for the delivery of small children, in pelves of moderately limited capacity, has brought no little embarrassment to certain operators. I think it may be plainly stated that in any instance where pelvic contraction is not so pronounced as to preclude the possibly safe delivery of an undersized child, it will be well to await the occurrence of labor, permitting it to advance sufficiently to enable us to determine nature's capabilities. This suggestion may be adopted by those who ignore the practice of premature delivery, or by any who may be introduced to a case at, or very near, the completion of uterogestation. If, in any such instance the child be small, delivery may be effected without serious consequences

to mother or child. The interest of the two lives at stake will be far better subserved, if, while awaiting the powers of nature, we have placed the mother amidst surroundings which will enable us to resort to Cæsarean section, or symphysiotomy under favorable circumstances. If such cases reside in out-of-the-way places, if in the houses of the dirty, or the very poor, or if in the country where the physician is unprepared or unwilling to operate, or, when he cannot at once command the required assistance, it is then clearly his duty to commit the patient to the care of one skilled in the procedure which may be required. This may, of course, necessitate change of residence. When such change is decided upon, the well-ordered hospital or retreat is the haven of maximum safety for the lives in jeopardy.

Most operating obstetricians base their treatment of cases upon the assumption that so long as the size and quality of the child remains undetermined, they have the right to assume that it is at least of average size. With this assumption, elective Cæsarean section, before a test of the second stage, has been done upon women with conjugata vera seven and five-tenths diameters.

My only Cæsarean section was an elective operation, in that I did not await a test of the second stage of labor. A primipara, aged eighteen, of the following dimensions:

Height.....	137	centimetres.
Crest.....	22	"
Iliac spines.....	21.5	"
External conjugate..	16.5	"
Internal conjugate..	7	"

Living child, eight and one-half pounds, which was taken out of the Paterson General Hospital by its mother about six weeks from the date of operation, both in a condition of health.

This result was, of course, satisfactory, but I am inclined to think that for cases where we can determine the internal conjugate to be between six and eight centimetres, and suspect a child of average size, it would be better to prepare for the unusual operations, but allow the second stage of labor to afford some demonstration of nature's capabilities. If a flattened pelvis is definitely determined to be five and nine-tenths centimetres, or less, and the child believed to be of average size, I should then decide upon the purely elective Cæsarean section.

As to the personal equation of mensurators, I should say that there should not be much difference between the results of the experienced who adhere to the same direction. Anyone who has not practiced external pelvimetry may, by measuring forty or fifty women, especially if he records, preserves and studies his results, become a fairly expert pelvic mensurator.

I should not expect my measurements in any particular case to be much at variance with his. All who practice midwifery should systematically practice external pelvimetry.

The greatest success in detecting asymmetry will accrue to those who possess the most accurate knowledge of normal pelves in their varying sizes. I must anticipate and answer a question which some of you may be waiting to ask me: as to what percentage of women have pelves nearly in accordance with the indications of the chart of normal conformation. Perhaps seventy per cent. or eighty per cent. will measure quite closely to the lines of the chart. The remaining twenty per cent. or thirty per cent. will present various grades of departure; while only a small per cent. will present *extreme* variations from the normal.

The chart of pelves of normal conformation is, of course, the result of much study and a considerable amount of personal mensuration of women. I have no right to expect, nor do I desire, that it shall be received and permanently retained as a criterion without amendment. The great necessity for some such standard, I am convinced, will present itself to all pelvic mensurating obstetricians. From them, and from such aid as cæliotomists interested may offer, let us hope that facts may be adduced with sufficient authenticity to establish the readings of my chart in its present form, or, alter them, and bring its lines in closer relation with nature.

26 Church St., Paterson, N. J.

An Aseptic Goodell Dilator ; Lateral Vaginal Retractor.

CAREY KENNEDY FLEMING, M. D.,

Adjunct Professor of Gynæcology, Abdominal Surgery and Clinical Midwifery, Gross Medical College; Gynæcologist to St. Anthony's Hospital, Denver, Colorado.

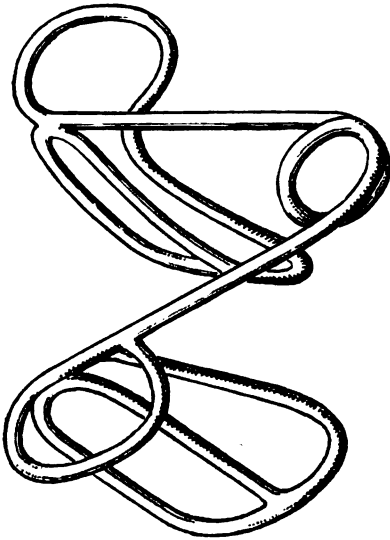
THE first instrument to which I desire to draw the attention of the medical profession is one that apparently needs no introduction, for upon a casual observance it seems to be the ordinary Goodell dilator, the instrument which is accepted as the most perfect uterine dilator extant. Upon closer inspection, however, several changes are noticeable. The most important is the presence of two new parts seen on the shank, which I have termed the keys. (See illustration No. 1.) These keys control two French

ferent pieces may be separated, thus rendering the instrument capable of being made perfectly aseptic. The handles are fastened by thumb screws, as can be seen in the illustration. The instrument has been made a trifle longer, stronger and better proportioned than the ordinary "Goodell."

It would seem that this aseptic device, which is quite easy to manipulate, would be a great improvement over the original instrument, converting a possibly dangerous dilator into a perfectly safe one.

The second illustration protrays, I believe, an original instrument, which has been named "Lateral Vaginal Retractor". It is designed especially to retract the labia in operations on the uterus or anterior vaginal wall. It is self retaining and should only be used when the patient is under an anæsthetic, for otherwise its use is painful and unsatisfactory. By its use the labia are retracted fully two inches, and the necessity of the presence of the obstructive hands of assistants is obviated.

From the illustration it can be seen (see illustration No. 2) that the blades of this instrument are markedly hooked, so that when retraction of the perineum is desired (rarely neces-

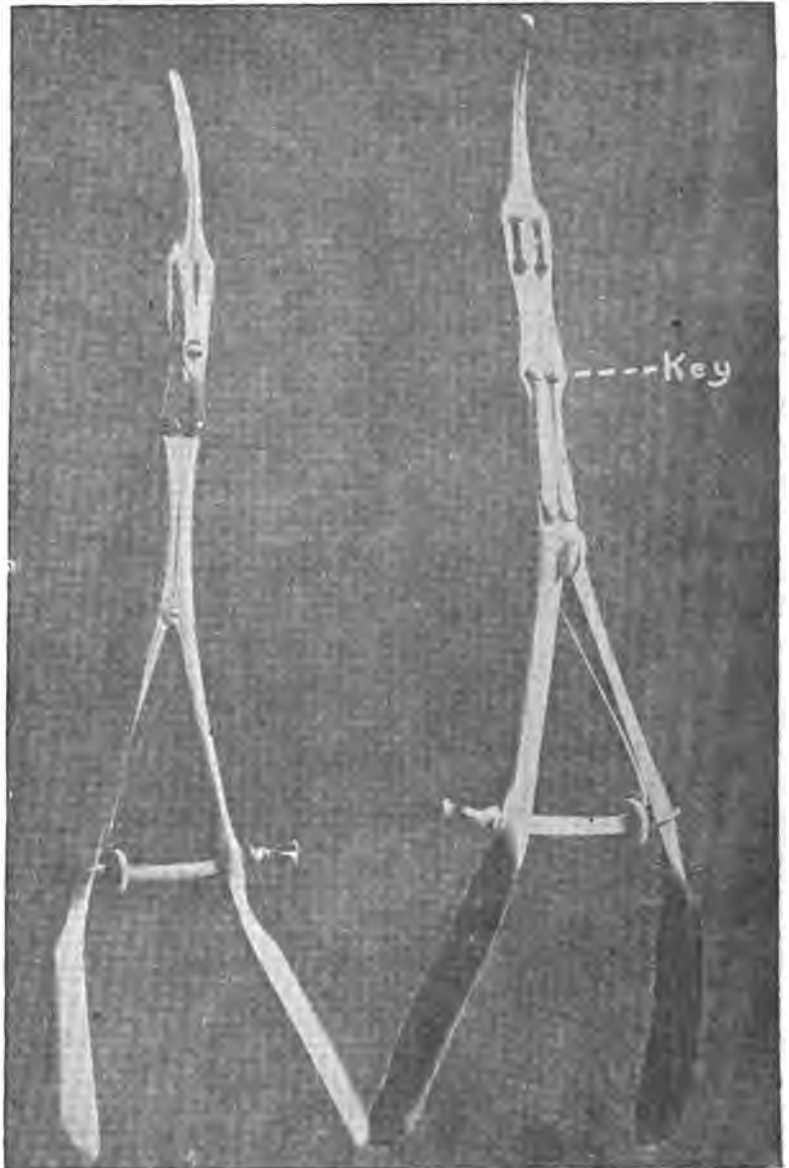


sary) locks which hold the blades and cross pieces of the parallelogram to the handle. Upon their removal the dif-

sary) all that is required is to fasten a weight to the handle, as is done with the Edebohl's speculum.

This instrument is made of one

Length of handles.....	2½ inches.
Length of blades.....	2½ "
Width of blades.....	1½ "
Space between blades.....	2½ "



piece of spring wire nickle-plated, and in appearance resembles a nasal speculum, though many times larger. It dimensions are as follows:—

Both of these instruments were made for me by the instrument house of J. Durbin, Denver.

Original Lecture on Extra-Uterine Pregnancy.

JAMES A. GOGGANS, M. D.,

ALEXANDER CITY, ALA

Senior Councillor of the Medical Association of the State of Alabama; Fellow of the Southern Surgical and Gynæcological Society; Fellow of the British Gynæcological Society, and Vice-President of Tri-State Medical Society of Alabama, Georgia and Tennessee.

GENTLEMEN:—It is through the courtesy of your professor of surgery that I have the honor of speaking to you to-day, and I wish to assure you that it is a privilege that I appreciate in the highest possible degree.

I shall proceed at once to speak to you of a disease of great importance, a disease with which any practitioner of medicine is liable to encounter, therefore much more valuable information may yet be acquired by studying the clinical history of each case. I refer to extra uterine pregnancy.

This specimen which I show you is a three-months foetus and the ruptured tube in which it was imprisoned.

It was removed from a woman thirty-five years of age, and she presented the following history: She had had three children, the youngest five years of age. Since the birth of her last child, she had had two abortions. I saw her in consultation on August 31st, and she had had three attacks of severe pain in the lower abdomen, followed by complete prostration and a rapid pulse, and presenting all the symptoms of internal hæmorrhage. Her menses had been regular, but she failed to menstruate

on July 23rd, at which time the menses were expected to appear. On August 15th, she passed a membranous mass, which was accompanied by the discharge of some blood. There was not much pain.

On making a vaginal examination it was found that some blood was still passing and a small irregular tumor could be felt low down in the pelvis, to the left side of and behind the uterus. This tumor was fixed and very painful on pressure. Taking these symptoms together, scarcely any pathological condition except one could be thought of, viz.: *tubal pregnancy*, the tube already having ruptured. An operation for its removal was proposed, but she declined to have it done, unless the above symptoms should arise again. She grew somewhat better for a week or two, and was able to walk about her room, but was again attacked with the same symptoms, and was brought to me, a distance of fifteen miles, for treatment. The section was made on September 28th. On opening the abdomen, blood welled up in the incision and the neoplasm was found bound down by many adhesions. The foetus and placenta was still imprisoned in the tube, and a rupture had taken place through which I

Delivered before the students of the Atlanta Medical College, October 13th, 1894.

could pass my three fingers. This mass was tied off close to the uterus, and the hæmorrhage from the bottom of the pelvis controlled by the free use of hot water and iodoform gauze packing.

I believe this to be a disease of far more frequent occurrence than it is generally supposed to be, and I wish to refer again briefly to the symptoms which will usually present themselves in a case of extra-uterine pregnancy.

I shall not attempt to describe to you the symptoms of all of the generally recognized varieties of ectopic gestation, and will content myself by telling you that I believe with Mr. Alban Doran and Mr. Tait, that the original seat of all foetal cysts is the tube. We must remember that the symptoms of ordinary uterine pregnancy are not always constant, neither are they constant in extra-uterine pregnancy. Menstruation at first usually disappears and then returns, accompanied by the expulsion of a decidual membrane. Beside this, we may have the ordinary symptoms of uterine pregnancy, including the enlargement of the uterus.

The diagnosis, however is based mainly upon the presence of a soft fluctuating tumor lying one side of, or behind, the uterus, which grows gradually and is more or less fixed and painful on pressure. Finally, rupture of the sac occurs, accompanied by extreme anæmia and severe pain, and in many cases death soon follows.

One other point to which I wish to call your attention especially is the fluctuation of which I have already spoken in the cysts of extra-uterine

pregnancy. Fluctuation cannot exist as a symptom in these cysts in cases where rupture has already taken place. And in the case of the woman from whom I removed this specimen fluctuation was not present. The contents of the cyst had already escaped into the abdominal cavity; hence the tumor was solid, irregular, fixed and painful.

The ætiology of the disease is still very obscure, and will certainly remain so until the physiology of impregnation is better understood.

The prognosis is very grave, so much so that we are justifiable in regarding extra uterine pregnancy as a most deadly disease. As to treatment, when left to nature, the outcome is very uncertain. Three-fourths of all cases die, and most of them from rupture of the cyst. The blood may be discharged through the tube into the abdominal cavity, known as tubal abortion, or the tube may be ruptured so that the blood may be discharged directly into the abdominal cavity or into the broad ligament. However this may be, death takes place from anæmia or peritonitis, but the cause of such peritonitis is unknown. From what I have said regarding prognosis, you will perceive that the treatment of all forms of ectopic gestation consists in removing the neoplasm by abdominal section as early as possible after the diagnosis is made.

Much has been said about treating this disease by injecting morphine into the sac, and about destroying the life of the foetus with electricity. I must say that I regard those measures as unsurgical and fraught with

much danger. Only eight or ten cases of extra-uterine pregnancy have been carried to full term with satisfactory results to both the mother and child, so the chances for such a happy result are so slender that I advise such patients to have the whole mass removed just as soon as the diagnosis is made certain. Especially is this treatment indicated during the first three months and if the rapture has already taken place.

After the fourth month, and up to the period of false labor, operation is not advisable. Operate in all cases after false labor and death of the child, when the amniotic fluid has been absorbed, indicating that the circulation in the placenta has ceased.

Under any circumstances, I would advise operation when the life of the mother is in danger.

EDITORIAL.

Holmes and Puerperal Fever.

Among the honors which are on every hand paid to Dr. Holmes for his talents and success, as a poet, wit and teacher, we must not forget to emphasize the very signal service which he rendered to our profession and to humanity by his early comprehension of the manner in which the infection of puerperal fever is conveyed, and for his masterly exposition of the infectious nature of this disorder and of the means which must be taken to avoid carrying it to our patients.

It is now fifty-one years since Holmes published his work on "The Contagiousness of Puerperal Fever," which was republished in full in this journal in June, 1893, soon after our venerable friend had received such a flattering tribute from the American Gynecological Society at the dinner given to that body by another distin-

guished scholar and man of letters, its president, Dr. Theophilus Parvin.

A great many of the profession were then surprised to find that the brilliant intuition, laborious collection of evidence and masterful exposition of this subject by Dr. Holmes antedated by several years the discoveries and publications of Semmelweis, for which the latter, although he suffered obloquy in his life time, has received abundant honors of late years, and for which a monument is now being raised to him by international subscription. There was little discovered or taught by Semmelweis which he could not have learned by a perusal of the pamphlet of Holmes, for which the latter also was blamed and derided.

At a time when it was in good form for celebrated professors of obstetrics, after attending an autopsy

on a case of puerperal fever, to go to lecture to their students with the fresh specimens in their pockets; and then to attend patients in delivery without washing their hands(1), it required no small courage for a young man to denounce such practices as they deserve in these eloquent and pathetic words:

"I have no wish to express any harsh feeling with regard to the painful subject that has come before us. If there are any so far excited by the story of these dreadful events, that they ask for some word of indignant remonstrance to show that science does not turn the hearts of its followers into ice or stone, let me remind them that such words have been uttered by those who speak with an authority I could not claim. It is as a lesson rather than as a reproach that I call up the memory of their irreparable errors and wrongs. No tongue can tell the heart-breaking calamity they have caused; they have closed the eyes just opened upon a new world of love and happiness; they have bowed the strength of manhood into the dust; they have cast the helplessness of infancy into the stranger's arms, or bequeathed it, with less cruelty, the death of its dying parent. There is no tone deep enough for regret, and no voice loud enough for warning. The woman about to become a mother, or with her new-born infant upon her bosom, should be the object of trembling care and sympathy wherever she bears her tender burden, or stretches her aching limbs. The very outcast of the streets has pity upon her sister in degradation when the seal of promised

maternity is impressed upon her. The remorseless vengeance of the law, brought upon its victim by a machinery as sure as destiny, is arrested in its fall at a word which reveals her transient claim for mercy. The solemn prayer of the liturgy singles out her sorrows from the multiplied trials of life, to plead for her in the hour of peril. God forbid that any member of the profession to which she trusts her life, doubly precious at that eventful period, should hazard it negligently unadvisedly, or selfishly." (2).

(1) ANNALS OF GYNÆCOLOGY AND PÆDIATRY. Vol. 6, p. 528.

(2) Loc. cit., p. 533.

(3) Loc. cit., p. 534.

He closes his paper with the clear statement that "whatever indulgence may be granted to those who have heretofore been the ignorant causes of so much misery, the time has come when the existence of a *private pestilence* in the sphere of a single physician should be looked upon not as a misfortune but as a crime." (3).

Nine years ago it was our good fortune and privilege to be able to demonstrate to our venerated teacher the form and shape of the infectious organisms whose malignant activity he had realized and emphasized forty-two years before. The writer had then lately returned from Europe deeply interested in bacteriology, and had published a paper on the Bacteria of Puerperal Inflammations, which referred to Dr. Holmes' early work. He expressed a desire to see the specimens and cultures of these organisms, and honored the writer with a visit which he will always

treasure in memory as one of the felicitous occasion of his life.

Years had not blunted the vision or lessened the interest of the author of the "Contagiousness of Puerperal Fever," nor had they dulled the wit or checked the eloquence of the "Autocrat of the Breakfast Table." In him the eager interest of the student was blended with the deep satisfaction of the believer whose

faith is turned to sight, while he illuminated the medical history of two generations with reminiscences and anecdotes which sparkled with his never-failing wit.

In conclusion, then, we would insist that in Holmes we have to honor the clear thinker and powerful writer who first propounded and promulgated the modern doctrine of the infectious nature of puerperal fever.

Professor Richelot and Vaginal Hysterectomy.

As this operation of vaginal hysterectomy is now becoming *à la mode*, a few words regarding the results and opinions of Professor L. G. Richelot, as expressed in his new work on this subject, do not seem out of place; and although there are a number of surgeons who condemn this operation without ever having performed it or seen it performed, it is, nevertheless, a subject interesting to the gynæcologist. As to vaginal hysterectomy for cancer, Richelot performed the operation twenty-four times during the years 1885 to November, 1888, which formed his first series of cases, with nine deaths. Of the fifteen remaining cases, eight showed signs of metastasis at the time of operation, leaving only seven in which some hope of success might be had. Now, four deaths occurred in from six to eighteen months, one after six years, and two patients are living, without any appearance of the disease, after seven years.

These results encouraged Richelot

to continue the operation, resulting in a second series of cases, numbering forty-four. Of these, there were three deaths, due to the poor condition of the patients, occurring respectively on the fifth, eighth, and ninth day after operation. Another patient died two months after operation, on account of a too hasty operation for repairing a urinary fistula: three patients could not be found, and lastly, two cases in which the diagnosis was doubtful. There remain, consequently, thirty-five cases. The ultimate result is the most important question, and will be now given. Of the thirty-five cases, ten had no effect in checking the progress of the affection. At the operation it was found that the cancer had involved the neighboring organs, consequently the hysterectomy only acted as a palliative.

The twenty five remaining cases of the second series, to which Dr. Richelot adds three of the first series, make a total of twenty-eight, whose

survival is interesting to note. There were eleven relapses, and seventeen are still alive, without any reappearance of the disease. Relapse took place in from three months to five and a half years after the operation. Of the seventeen patients still alive without the affection, one was operated on seven years and three months ago, another six years and ten months, a third, four years and one month, three patients over three years, and three over two years ago. Dr. Richelot mentions cases of long-continued health after hysterectomy, performed by Reverdin of Geneva, Ott of St. Petersburg, Olshausen, Terrier, Bouilly. No one can dispute the fact of therapeutical success if the patient lives six full months after operation without reappearance of the affection, and Richelot concludes that cancer of the uterus is no worse than that of the breast, that it is less terrible than cancer of the tongue, and that when it attacks the uterus, vaginal hysterectomy is the best method of treatment.

There are certainly certain accidents which may occur during the operation, such as perforation of the bladder, or tear of the rectum, but these accidents may be easily repaired at once. If a fistula ultimately results in spite of everything, the surgeon should wait before attempting to operate it. An important remark should here be made, namely: the formation of urinary fistula showing itself some time after the operation, resulting from a small eschar falling from the bladder. The clamps cannot be accused of this, as it has happened after hysterectomy performed

without their use and in which ligatures had been employed. These fistulæ are in no way special in hysterectomy for cancer as they have been met with in cases of extirpation performed for pelvic suppurations, etc. Their prognosis is favorable, for they nearly always heal of themselves, and, if not, the surgeon should wait before undertaking their repair.

We now come to the important question of pelvic suppuration. Dr. Richelot has obtained fifty-six cures and five deaths of the sixty-one patients he has operated on for this affection. It is in these cases that he considers vaginal hysterectomy as the operation to perform and expresses himself as follows: "It allows the pelvic foci to be reached in their lowest parts, and to be opened outside of the peritoneum without contaminating the serous membrane." It permits the surgeon to come directly on them without hunting for them among the many adhesions; to see and radically treat them. And, lastly, it allows of their removal when possible or only their evacuation, resulting in the rapid recovery of the patient.

Cases show that after hysterectomy, total ablation of the adnexa is not necessary to obtain a complete cure in every case at least, and drainage and long suppuration are done away with. Simple vaginal incision in pelvic suppurations should not be compared with vaginal hysterectomy, for, he says, "it is not sufficient for all lesions and does not want to be too highly recommended, but it is a good method, temporarily or definitively, when it is indicated by a fluctuating

prominent cul-de-sac, or when the surgeon cannot act radically on account of one thing or another, such as the age of the patient, doubt as to a bilateral lesion, rapid operation desired, acuteness of the symptoms and probable virulence of the pus, dangerous extent and situation of the purulent collection; and, lastly, a point on which I insist, is a recent confinement and the friability of the uterus."

The ultimate results of vaginal hysterectomy in pelvic suppurations are excellent in all cases that could be followed; cure was perfect and durable, even when the fundus uteri could not be removed.

Dr. Richelot classes among pelvic suppuration a form in which there is never any pus, but in which, after several inflammatory attacks and long suffering, the pelvis is filled with thick masses, in the midst of which the uterus is glued as if in putty. Dr. Richelot thus expresses himself: "*It is a real fibrous process, invading the pelvic cavity.*" In seven cases where vaginal hysterectomy was performed under these conditions, Richelot obtained seven cures, and he says, with good reason: "Extensive suppurations and complicated adhesions are the bad point of laparotomy and the triumph of vaginal hysterectomy, but in order to know this, the surgeon must have had complete experience, that is to say, must have practised both methods and to be able to compare them by experience rather than by his imagination."

In cases of pyo-salpingitis that can be enucleated, Dr. Richelot still prefers hysterectomy to laparotomy, for by the first named method soiling

the peritoneum is surely avoided. If the lesions are non-suppurating parenchymatous, hydropic, etc., varieties, which can also be enucleated so that the danger of infecting the peritoneum is reduced to a minimum, it would appear that laparotomy and hysterectomy are equal in merit. Dr. Richelot, however, is in favor of the vaginal operation, for he says: "The ultimate results are more constantly good, the cures more plainly visible."

There is a considerable argument in favor of this favorite operation, since he was led to perform twenty secondary vaginal hysterectomies, that is to say, after a laparotomy, because the uterus remained in a diseased condition, although the lesions found did not always account for the persistent hæmorrhages. Now, with the exception of a morphinomaniac, whose case cannot serve as an argument, the removal of the uterus has always brought about a complete cure. This is a clinical fact, whose importance it is impossible to deny.

What are the indications for laparotomy in inflammatory lesions? "It is obligatory if the bilateral lesion is not demonstrated and if the woman is young." In this case, if there be a shadow of doubt, preservation should be tried; an exploratory incision of Douglas cul-de-sac does not afford a means of recognizing the exact condition of the ovarian tissue of the permeability of the tube. "Let us then do laparotomy" says Richelot, which is an operation suited to this case and allows us to seize the most favorable chances and to surely avoid useless sacrifices." And he adds: "Doubt

as to the bilateral lesion does not exist as often as the adversaries of hysterectomy hold.

As to hematosalpinx, which by rupture, become pelvic hæmatocele,

Dr. Richelot simply says: "In this case I cannot say that my preference is very considerable; all my laparotomies for large hæmatic tumors have given me good results."

The Special Action of Permanganate of Potassium on the Gonococcus.

IN a recent thesis, upheld before the Faculty of Medicine of Paris, Dr. Lemoyne de Martigny discusses the treatment of gonorrhœa by irrigations with permanganate of potassium, and also gives an interesting chapter on the action of this antiseptic on Neisser's coccus. At a lower proportion than 1 to 1000, permanganate of potassium is endowed with only a very weak bactericide action. However, the gonococcus is seen to disappear from the urethral discharge after two or three irrigations of a 1 in 3000 solution of the drug and cure has been obtained by a 1 in 2000 solution. Much more powerful antiseptics do not eradicate the gonococcus excepting by a much longer continued treatment. On the other hand, if the dose of permanganate is increased, its antiseptic action becomes more intense, but instead of witnessing its good effects increase in proportion, the gonococcus on the contrary is found to proliferate, and the same is true if the irrigations are practiced too frequently. This fact tends to show that permanganate of potassium does not act as an antiseptic in the treatment of gonorrhœa. Now, how do the ordinary antiseptics act? By removing the gonococci found on the surface of

the urethral mucous membrane. Their action is only present at the time of the irrigation, and, what is more, if the irrigations produce a reaction of the mucous membrane, this reaction is rather favorable for the development of the gonococcus. It is on this principle that is based the revealing reaction of the gonococcus by nitrate of silver. After a time, the mucous membrane becomes accustomed to the irrigations, and the often repeated destruction of each successive issue brings about an exhaustion of the gonococci situated deep down in the mucous membrane. This is not the case when well regulated doses of permanganate are employed, because the gonococci disappear after the first few irrigations; although when the physician is dealing with other than specific infections, the action of the permanganate is notably inferior to other antiseptics, especially corrosive sublimate and nitrate of silver. Is this then a special action exercised by the permanganate on the gonococcus to the exclusion of other microbes? This opinion can be upheld. Every day we witness the development of certain organisms on media unfavorable for other kinds, and certain drugs are more harmful

to certain varieties of organisms than to others. But, in the question under consideration, Dr. de Martigny does not believe it is the case, and the curative action of the permanganate should be attributed to a special action that it exercises on the urethral mucous membrane. Permanganate of potassium, which is not absorbed and does not act on the deep layers of the mucous membrane, determines, however, an œdematous swelling of the entire urethra and a serous discharge of variable duration. Now, this serous media on the mucous surface of the urethra and even in the interior of the walls of the canal, is

most unfavorable to the reproduction of the organism. By irrigations, the gonococci are washed away from the surface of the urethra; by the reaction produced by them, they can no longer be cultivated and proliferate to any degree, and the organisms which are situated in the depth of the tissues are soon expelled by the serous flux. It is in this manner that Dr. de Martigny believes that the superior action of permanganate of potassium over other antiseptics should be interpreted, and we believe that the same holds true in gonorrhœal infection of the vagina, as in that of the urethra.

SOCIETY PROCEEDINGS.

Boston Society for Medical Observation.

Regular meeting of the society, December 3, 1894. Dr. S. W. Langmaid in the chair.

Dr. PHILIP COOMBS KNAPP read a paper entitled, —

“THE TREATMENT OF CHOREA, WITH SPECIAL REFERENCE TO THE USE OF QUININE.”

This paper may be summarized as follows: —

In the spring of 1893 Dr. H. C. Wood suggested the use of quinine in chorea, on the hypothesis that chorea was an affection of the spinal cord, due to an impairment of the inhibitory functions of the cord, and that quinine, as he showed by experiment, stimulated the inhibitory centres. Acting on this hypothesis, quinine was given, in doses of six to

twenty-four grains daily, in eight cases of chorea. In three cases there was recovery at the end of one, three, and ten weeks respectively; in the other cases quinine did no good, and was abandoned for other forms of treatment. In all cases rest, diet, hydrothorapy, etc., were advised, but no other drugs were given. Dr. Wood's hypothesis that chorea was an affection of the cord was not accepted, the evidence all pointing to a cerebral, and possibly a microbic origin, although in some cases the cord may also be involved.

The hypothetical reasons for using quinine seem untenable, and practical experience shows little benefit from it. The best methods of treatment consist of rest, which can seldom be made absolute, a liberal but simple diet, in which meat plays but a small

part. and cold salt baths. Arsenic is of distinct, although secondary value. Sedatives are sometimes beneficial.

Dr. PUTNAM said that he had had no experience in the use of quinine for chorea, but believed in the hygienic treatment combined with arsenic. He was satisfied that arsenic was beneficial.

Dr. MORTON PRINCE remarked that, while he had had no experience in the treatment of chorea by quinine, he had no doubt that Dr. Knapp's conclusions were correct. Reasoning *a priori*, he should have little faith in it. He thought there were few diseases in which it was so difficult to judge the effect of treatment as chorea. He believed chorea varied as did other diseases—some cases were long, some were short. Judging from the apparent effect upon patients as they came to the clinic, he believed arsenic was beneficial. Dr. Prince then pointed out the fallacy of drawing conclusions from a limited number of cases. He regarded the doctrine of chances an important factor, and thought that conclusions as to treatment could only be drawn from a very large number of cases. In regard to the pathology of chorea, Dr. Prince said that if obliged to make a guess, he should guess that it was due to some form of toxine poisoning. Dr. Prince concluded his remarks by saying that most of the cases he had seen were hospital cases,

and said he should like to ask the general practitioners if they saw many cases in private practice, or whether it is a disease which is peculiar to the poor.

Dr. HAROLD WILLIAMS, in reply to Dr. Prince's question, said that in his experience chorea was by no means a disease of poorer children. In his summer practice at Nantucket, many cases of chorea came under his care, and all children in the better class of life; whereas, in the past six weeks of his service at the children's room at the Boston Dispensary, out of six hundred new cases, there had been no case of chorea. Dr. Williams regarded the anæmia usually associated with the disease as the result of the malady rather than the cause. He was glad to find that the writer's experience coincided with his own. He had no experience in the treatment by quinia, but regarded rest in bed, with a cheerful and pleasant room, as the *sine qua non* of treatment in these cases. Children with chorea are generally fractious, irritable, excitable and easily frightened, and he had come to rely upon soothing the mind by diversion and entertainment, with physical rest in bed, as the most effective forms of treatment. Under such regimen, his case had done extremely well without medication, but it was, of course, hard to say how much of the improvement was due to the sea air.

Meeting of the Philadelphia Obstetrical Society, Jan. 13, 1894.

President Dr. Barton Cooke Hirst in the chair.

REMARKS ON A SERIES OF CASES OF EXTRA-UTERINE PREGNANCY, BY DR. CHARLES P. NOBLE.

The author's experience embraces

twenty-five cases, fourteen of which were seen within one year. All the cases were instances of tubal gestation. In four cases the tube was unruptured; in twenty rupture had taken place, and in one tubal abortion was under way.

In nineteen cases the diagnosis of ectopic pregnancy was made (including two in which it was strongly suspected) before the operation. In six cases the trouble was supposed to be some other morbid condition of the appendages. Two of the cases (one strongly suspected) were instances of unruptured tubal pregnancy. In seventeen (two strongly suspected) rupture had taken place. These included the case of tubal abortion. In two cases the diagnosis had been abandoned on account of the absence of symptoms. Of the cases of ruptured tubal pregnancy with hæmorrhage, the diagnosis was made in seventeen. In three it was not even suspected, and in two it was ruled out on account of the absence of symptoms.

It has been held that the diagnosis before rupture can not be made, but the author's experience was that the cases in which rupture had not taken place were as easily diagnosed as those in which rupture had occurred. In the large percentage of cases the symptoms and physical signs are so characteristic that the diagnosis is as certain as in any other condition.

In the twenty-five cases there were four deaths, all desperately ill at the time of operation. The first case was pregnant four months, and the abdomen was filled with blood. She died in hyperæmia, in thirty-six hours. The conditions in the second case were similar, except that the pregnancy was not so far advanced. The third case was moribund at the time of operation, and the abdomen was full of blood. The fourth patient had general septicæmia, and at the time of operation the temperature was 105°. The hæmatocèle had suppurated, and the left broad ligament and tube were distinctly gangrenous. She died at the end of a week of general septicæmia.

Operation should be done as soon as the diagnosis is made, and the

principles which apply to pelvic surgery are equally applicable to cases of ectopic pregnancy. Where operation is done with the patient in extremis, rapidity in operation is essential to success. The opposite appendage should not be removed unless it is a menace to life. The abdomen should be left full of water, to save the time required to remove it and to help fill the blood-vessels. Drainage should always be used in this sort of cases. As these cases die of acute anæmia, he suggested the use of transfusion.

DISCUSSION.

Dr. J. PRICE. — This is so important a subject that I should like to make a few remarks. We all know that the profession have been educated to recognize this malady, and it is one of the most frightful and horrifying troubles that we have to deal with aside from appendicitis, and I scarcely know of any trouble responsible for more deaths than ectopic pregnancy. Much has been said and much written, but much remains confusing. We all know that this work began in America, Bannam of Virginia doing the first operations in 1790 and 1799.

Dr. Noble has taken rather peculiar ground from time to time. For instance, a few years ago, he said positively in the Pathological Society that unless the foetus were found, it was not a case of ectopic pregnancy. That is on record. Dr. Formad, in his thirty-five cases in the coroner's office, found a very small number of foetuses — less than twenty five per cent. It is the exception to find the foetus.

Dr. Noble alludes to five cases without symptoms, and with an enormous quantity of blood in the peritoneal cavity. Surely the examination in those cases was careless, or the observer has not given the subject

sufficient attention and study to recognize symptoms so marked and so common, and always present: the inaptitude to conception, prolonged sterility, the absence of one or two periods, or a delayed period. There are some symptoms which are characteristic; for instance, the cramp-like pains which are always present where rupture occurs. To-day I asked a patient who has borne five or six children and has suffered all sort of pain incident to child-birth. I asked if she had ever experienced pain of that character in her labor, and she said that she had not. She has had several ruptures. She missed May, June and July. Rupture took place in August, and recurring attacks have since taken place. She now becomes greatly emaciated, suffering greatly and with a huge mass on the left side posteriorly, with the uterus pushed up. All over the country we now find physicians recognizing this trouble, and nothing could be more gratifying than the fact that we have shared in this education that has gone on all over the country,—educating the general practitioner to recognize these important cases.

The mortality of four cases in twenty five is large, and the fact that some of them died one week after operation would rather indicate that the toilet or the drainage was not complete. The practice of sponging to remove the blood in these cases is bad. I scarcely know of anything that will destroy life quicker than the sponge applied in these cases, and pushed into all the corners and crevices of the peritoneal cavity.

It is only exceptionally that you find an absence of objective signs, and that only in very acute cases. You may be asked to see a patient where the hæmorrhage takes place at night. You find the patient exsanguinated, the uterus in position, and no boggy mass. You have nothing to guide you except the history of the

case and the characteristic symptoms. I have had only two such cases in 103 ectopic pregnancies, and both were in the wives of doctors. In these cases—plainly stated to be extra-uterine—we all agreed that section should be done. An enormous quantity of blood was found in both cases, and both women made speedy recoveries. In these cases there is no time to be lost with transfusion, but the use of a saline solution thrown into the cellular tissues is sometimes of service. I have done that with good results.

With regard to the removal of the placenta, this is still a disputed point. One or two successful removals of the necrotic placenta in chronic cases emboldens a class of men to attempt the removal of the placenta in all cases. The man that attempts to remove a living and growing placenta from the wrong side of the uterus will recognize a characteristic hæmorrhage which he has never before witnessed. A few months ago an old physician of Georgia told me of a case where the woman had gone through spurious labor and was dying of over-distention and exhaustion. He recognized extra-uterine pregnancy and opened the abdomen and delivered the child and attempted to remove the placenta. At once the hæmorrhage was alarming. He simply delivered the placenta and uterus and placed a kœberce and removed the uterus and the patient recovered. That is an exceptional case, for only rarely do we find the placental attachment limited to the uterus. It may extend from iliac fossa to iliac fossa and involve both large and small bowel. The employment of other methods, as hermetically sealing the sac, or filling it with vinegar, is better.

I am glad that in at least one variety of cases, Dr. Noble has reached the point of minimizing the time, exposure and other things which

in a slow operation predispose to mortality.

Dr. CHARLES P. NOBLE.—I am quite surprised to learn that I ever said that extra-uterine pregnancy was not extra-uterine pregnancy unless the foetus was found. I have no recollection of such a statement. If I believed that I should have to throw out most of the cases reported to-night, as the foetus was found in only four or five of the twenty-five cases.

I have no reason to change what I said about some cases having no symptoms. I observed the cases carefully. Two were in the hospital for a week, and in neither had I the remotest idea that they had extra-uterine pregnancy until I opened the abdomen. While I agree that in general the diagnosis is very clear, I am quite certain that in a certain percentage of cases symptoms are not present that would warrant a diagnosis.

My paper dealt simply with extra-uterine pregnancy in the early months, and did not cover the late cases discussed by Dr. Price.

THE USE OF OPIUM IN SURGICAL PRACTICE. BY DR. JOSEPH PRICE.

The author referred to the great harm wrought by the indiscriminate use of preparations of opium given simply for the relief of pain. This he attributed largely to errors in teaching. It is in surgery and in diseases of the nervous system that the use of opium does the most harm. In the management of surgical cases the convalescence is more satisfactory and speedy when opium is not used. He felt certain that the use of opium was responsible for much of the mortality in abdominal surgery. He never used it except in cases of malignant disease.

In order to illustrate the successful management of surgical cases without opium he reported the details of four cases of angry acute peritonitis recently operated on. In these cases the treatment consisted of section, irrigation and drainage, followed by rest and quiet without opium, the result being prompt and complete recovery.

Adjourned.

New York Academy of Medicine, Section in Obstetrics and Gynæcology, Meeting of December 27, 1894.

MALCOLM MCLEAN, M. D., chairman.

DISCUSSION ON DR. P. A. HARRIS'S PAPER, STUDIES IN Pelves, PEL- VIMETERS, AND PELVIMETRY.

Dr. SIMON MARX.—I think we should all be very thankful to Dr. Harris for his very elaborate paper. I have nothing new to offer, feeling that I agree almost entirely with the speaker. To start at the beginning, I believe the statement made as to the individuality of the pelvimeters is a perfectly correct one. I believe

the poorest pelvimeter we have to-day is the French, — the Collin, not the combined one (or Robert and Collin). It will do very well in women with but little pediculus adiposis, but in one who is at all extreme in these directions it is almost impossible to measure the crest and other diameters with it. The second best one which I have seen is the reader's, but the fatal objection which I have to it is its expense. However, I understand that it is now sold somewhat cheaper than it has been, but it is still too expensive. So that in spite

of its good quality and the use which can be made of it, I still prefer the instrument of Dr. Collyer, because it is so very cheap and so very light, and with it you can measure any pelvis you choose.

Dr. Harris took fully the configuration of the pelvis into consideration, and also the size of the foetal head. I do not believe that measurements, either of them alone and separately, will do us any good. Each individual case and each pelvis has to be considered. Whilst the external measurements will do us a great deal of good, still we know that in certain women with normal pelves, but bearing a large child, it is impossible to get the head through, therefore making the case one of relative contraction of the pelvis. However, as I said before, since external measurements are very useful, the pelvis of every woman should be measured. No one has a right to practice modern obstetrics who does not do so.

Regarding internal measurements, I have seldom been able by introducing the index or middle finger into the vagina of a pregnant woman to feel the promontory. But if in an individual case I could not reach the promontory I have felt that the pelvis was normal, especially if the external measurements were normal. But if in any case there is observed to be a disparity between the head and the pelvis, there is only one safe mode of measuring the pelvis, that is, by introduction of the hand, and measuring the true conjugate,—not estimating it, but measuring it. Certainly you can estimate the size of the child's head.

I believe the reason why physicians do not use the pelvimeters more frequently is the fact of their faulty construction and the old way in which students were taught. They were simply told that there were instruments of this kind, but were not shown in a systematic way how to

examine the pelvis. Only a short time ago, while I was speaking of pelvimetry at the post-graduate school, one of the students, on seeing a pelvimeter, wanted to know what it was. He had never seen the instrument before, and never had occasion to use it.

DR. HERMAN L. COLLYER. — I have been interested in the paper. It shows a great deal of hard and industrious labor—labor in the dry sense of the word. But it brings out facts which have been sadly neglected in the past. In fact pelvimetry is almost in its infancy. In my early college days the professor in obstetrics would bring out Baudelocque's pelvimeter and say, "Here, gentlemen, is an instrument which is so wide in its expanse that it requires a case of its own to carry it along in the streets. It is a very good instrument for measurement, but you must depend upon your fingers."

Now a days instruments are made somewhat more handy, but still the instrument makers have a somewhat mistaken idea of the doctors' pocket-book. They think their pocket-book is endless, and that an instrument, no matter how small or how cheaply it can be gotten up, must cost a certain price. To charge, as they do, anywhere from five to ten dollars for a pelvimeter is absurd. That is one object I had in devising one shown here to-night, because of its cheapness. I know it can be made even cheaper than the present price, but I cannot get an instrument maker to sell it for less.

Now I contend that every man who attends a confinement should have some idea as to the dimensions of the pelvis, otherwise he is jeopardizing that patient's life. He may have an obscure idea of contraction from measurement with the index finger, but if he undertakes to record the case it is a question whether the contraction is to the extent that he says.

With a recording pelvimeter he can put it down in black and white as so many inches or so many centimetres.

Pelves differ in shape and dimensions, just as do heads. In Polish Jewesses the pelvis is frequently flattened. There is a great deviation in their pelves. In Italians, who have to carry heavy weights, we observe that the pelvis is flattened antero-posteriorly and widened laterally. Now, those dimensions are exceedingly difficult to get. So far as external measurement goes, it gives us an idea of whether there is internal diminution in measurement. These measurements are very difficult to get. But by this very instrument, as I mentioned in a letter to Dr. Harris, you can make such measurements. You can insert your finger into the pelvis. In the majority of all cases during pregnancy, whether at full term or before, and having got to the promontory, you can press the bar of the instrument against the symphysis pubes and the record on the instrument will tell you the exact distance in a straight line across the pelvis antero-posteriorly. Now the transverse diameter is measured in a similar manner, simply changing the direction of the bar of the pelvimeter to the lateral wall of the pelvis at the brim. You have now one side of a triangle, the base of which is known, and by a little mathematics you can get the third side, which will give you the lateral or transverse diameter of the pelvis.

We have cases where there is no contraction, the pelvis being roomy and normal, but the head of the child is in excess of the normal head, and that child has either to be sacrificed or symphyseotomy has to be performed, or possibly cæsarian section. Now at this date the preference is for symphyseotomy. We have come down to that point where by modern devices we can

control sepsis and hæmorrhage, and we leave cæsarian section to cases in which symphyseotomy will not enable us to extract the child.

The device Dr. Harris showed for lacing the pelvis is unique. It is a very good abdominal binder. But I have found in symphyseotomy that you can take a fairly broad piece of webbing, put a buckle on it, and buckle it around the pelvis above the trochanters as tight as necessary and leave it there, and it will answer the purpose perfectly well. It is out of the line of the incision, and out of danger of becoming soiled. It holds the pelvis together as firmly as a plaster of paris bandage.

The paper is full of points for discussion, but the time is too short. I am exceedingly glad to have heard it, and think the author is deserving of great credit.

Dr. E. A. TUCKER. — I am very glad to have heard this paper, but I think, as Dr. Collyer has said, that it is one which is very hard to discuss. One should have time to reflect upon the statistics, and compare them with his own observations. Such a paper, of course, is deserving of the highest credit, for it is evident the author has given much time to bringing out the many points. Simply the array of figures shown would repay one for attending the meeting, not to speak of the display of various pelvimeters and the demonstration of their respective merits. As soon as one begins the study of the subject at all, he wishes to know about the merits and demerits of the different pelvimeters.

The statement that one who proposes to attend a woman in labor ought to be able to perform pelvimetry with reasonable accuracy seems self-evident. Yet we know such a statement has to be made over and over again in order to induce action on the part of general practitioners. It is a subject which has

been sadly neglected in the past. I think it is coming a little more to the front now. Every day we meet with evidence of past neglect. I think it would be just as reasonable to expect to detect some chest disease without examination of the thorax as to detect a difficult parturition without measuring the pelvis. Cases for confinement are constantly sent us with a diagnosis which is absurd. We know this on examination, but not simply by looking at the patient, which is probably all that some do. On reducing the physician's statements down to figures we at once see inaccuracy.

An illustrative case was admitted to the Sloane Hospital today, the patient having been sent by a physician of good reputation, but who evidently was deficient in pelvimetry. He evidently had not examined the patient, or, if he had, it was not done properly.

Examination of the inside of the pelvis ought to be insisted upon as well as external examination. While the latter is important, I think internal measurement must be the final test, and it should be made under light chloroform anæsthesia. I introduce my hand in cases where external measurement has shown departure from the normal, and feel over the inside of the pelvis thoroughly.

The question of measuring the child is also one of extreme interest, and also full of difficulties. A certain amount of information can be obtained through the abdominal walls, especially where the child is high, the head above the brim, the position being determined by external manipulation or by touch through the vagina. Of course there is a good deal of room for error, but I think you can come fairly near estimating the size of the child's head; at least in a number of cases in which I have tried it the result showed not more than reasonable variation, say

half a centimetre. That at least gives one some idea. Just grasping the head between the hands is a fair guide to one who is at all familiar with the dimensions of the head. Again, by vaginal examination, with the cervix a little dilated, I have been able a number of times to detect by touch the degree of ossification of the cranial bones by the readiness with which they yield under the finger.

Dr. HARRIS. — The gentlemen seem not to have left much for me to say in conclusion. I must apologize for the length of my paper, as doubtless it has, in that regard, tested your patience. I regret that Dr. Marx has been compelled to go, as I wish to say a word or two in reply to his remarks.

I understand he prefers the instrument of Dr. Collyer because it outspans my instrument, is the lighter and is cheap. I do not wish to make a microscopical comparison between Dr. Collyer's instrument and my own, for such a comparison would be required to determine the relative capabilities of these two instruments. Both span amply, with preference probably in favor of my pelvimeter. My instrument, as stated in my paper, weighs one hundred and ninety-seven grams; Dr. Collyer's two hundred and twenty-nine grams. Both, of course, are inside-pocket instruments. My instrument occupies a rectangular space of twenty-six cubic inches; Dr. Collyer's forty-one cubic inches. As to cost, I have been told that my instrument may be made as cheaply as the Collyer instrument. Steel is the metal of which such instruments of precision should be made. If my instrument is also made in aluminium, it is very light, but it should be made a little thicker than the aluminium one shown to-night. It should weigh about one hundred and fifteen or one hundred and twenty grams, instead of ninety-seven grams, which is the

weight of the one you have seen. I would not recommend anyone to buy the aluminum instrument until the blades have been made heavier, lest they should become bent. I discover also that the instrument of Dr. Collyer is made in brass. The one I have was loaned and came back to me a little bent. The instrument I now have in my hand, my own instrument, is made of steel, and if properly tempered, it can be relied upon. It is lighter than brass, but of course twice as heavy as it would be if made of aluminum.

Aside from measuring the pelvis and head, and estimating the degree of ossification of the latter, one has to take into account the patient's previous history, a point well brought out in the paper.

Regarding spanning capabilities of Collyer's instrument and my own, which are the only ones in the race, this chart, which I failed to pass around, shows both of them to be ample.

Respecting the pelvic bandage which I am now using after symphysiotomy, I did not mean to dwell upon it this evening. In fact I did not intend to show the photographic views of it which you have seen. It was an experiment, and I found it very convenient and efficient. I do not know whether such a one has been used before or not. I would like to ask Dr. Collyer for the width of his bandage, for that is an essential point. I think he said it passes around the crest.

Dr. COLLYER.—It is not a bandage, really, but a strap with a buckle, which holds the symphysis firmly together. It is made of webbing that will not stretch. It is about two inches wide, with a buckle attached to tighten it firmly. Of course a muslin bandage dressing may be put over it.

Dr. HARRIS.—I want to make myself plain on one point. I do not want

any person to assume that I regard external pelvimetry as conclusive, although it may be conclusive in certain cases. I only want it known that I regard it as presumptive evidence. And it is very strongly presumptive in many instances. It is the evidence which we require to prepare us for what may be coming. I always rely finally upon internal measurements, as you might well suppose. I should only use external pelvimetry to discover probable or possible internal deformity. The trouble is that cases requiring interference are not discovered until they have been too much tampered with. I have practiced obstetrics a good deal myself. I presume I have delivered a thousand, possibly fifteen hundred women, and I know that I have done a great deal of disagreeable and possibly bad work in times past, and I know that many are doing such work now. I know further that they will continue to do it unless they avail themselves of proper examination of their patients. And I fully agree with Dr. Tucker, and wish to thank him for the emphasis which he has placed upon the necessity for pelvic examination. As to the patients whom we should examine: I have clearly stated that in my paper. And as to those whom we see for the first time when called to the labor, we should proceed to examine them at once, if there is any indication of delay in the second stage.

As a matter of fact, I know that fifteen to twenty-five children have been intentionally mutilated to effect delivery in the town where I live, in the last fifteen years. I have collected a considerable number of such cases, and I think the total will be more than twenty-five. Yet I must say that I have been unable to get the proper external pelvic measurement of more than one or two of these cases.

REVIEW OF GYNÆCOLOGY.

OSTEOMALACIA. By DR. L. SEELIGMANN.

The author reports the case of a woman, aged thirty-seven, married fifteen years, had had seven children at term and five miscarriages. Present trouble dated from eighth gestation seven years previously; since then has been almost entirely confined to bed. Conj. diag. eight cm.; pelvic outlet admits only two fingers. At term of last gestation Porro's operation was performed; living child weighing 2 kil. 410 gram. Primary union without temperature; stump came away at the end of four weeks. To rectify the bony deformity, a traction apparatus was applied to the lower extremities with counter traction from the axillæ five days after operation. Very successful result at the end of eight weeks; eighteen centimetres increase in height; the pains in the bones and joints; the swelling of the extremities had disappeared. The kyphoscoliosis and deformity of the ribs were almost entirely reduced. The pelvic outlet was larger, conj. diag. nine centimetres. Finally the patient could attend to her household duties. According to the author, removal of the ovaries is the proper treatment where prophylactic and medical means of treating osteomalacia have failed. He rejects the proposition of Zweifel to leave the ovaries and ligate the tubes. (*Berl. klin. Wochen. No. 44, 1894; review in British Gynæcological Journal, Nov., 1894.*)

PUERPERAL INSANITY.

Properly speaking, the puerperal condition refers only to the junctional and organic modifications which take place in women during and after parturition, before the return of the

menses, or the physiological establishment of lactation. But from the point of view of puerperal insanity, this condition may be divided into periods of one gestation; two, puerperal condition proper; three, lactation. The following statistics show the relative frequency of psychosis in each of these periods: gestation, 3.1 in 100; puerperal condition proper 9.2 in 100; lactation, 3.6 in 100. According to Marcé, insanity caused by pregnancy generally develops about the end of the fourth month, and increases progressively. Melancholia is the most frequent form. Schmidt gives the following proportions: 52.9 in 100, melancholia; 31.3 in 100, mania; 10.3 in 100, chronic systematized delirium; 5.8 in 100, general paralysis. Marcé observes that labor seldom relieves this form of mental disease; on the contrary, the symptoms are generally aggravated, and melancholia often assumes the form of more or less violent mania. Abortion, sometimes recommended as a curative measure, should be strictly forbidden. Gestation, with these patients, is usually normal, and abortion seldom occurs spontaneously. The opinion advanced by some authors that pregnancy exerts a beneficial influence upon insanity already established is not sustained by statistics. Esquirol believes that marriage and labor usually stimulate the disease. When psychosis appears at an early period, prognosis is more favorable than when it occurs toward the end of gestation, but it generally persists for several months, and relapses may be expected in subsequent pregnancies.

The causes of puerperal insanity proper — that is, insanity — which develops during the period following labor before the organs of generation have resumed their normal functions,

are divided by Campbell—Clark into predisposing causes and producing causes. In the first category, hereditary predisposition is the most important, as it exists in fifty-six per cent. of these cases. The complicated influences affecting a first pregnancy are next in order. Nearly half the patients suffering from this form of psychosis are primiparæ. Among producing causes, infection occupies the first rank—infection of the uterus or of other organs. Campbell—Clark reports 70, of 100 cases, caused by infection; 66 by infection of the uterus, and 4 of the kidneys. More than half of these patients were under the influence of intense moral emotions; and we realize the importance of this influence when we consider the large number of women who suffer from puerperal infection. Dr. Idanof gives the proportion of eight or nine per cent. and the comparative rarity of puerperal insanity. The disease usually appears about the fourth or fifth day. Irritability, headache, insomnia, agitation, diminished secretion of milk, are premonitory symptoms. Fever may or may not be present, but the head is always hot. Sometimes the disease assumes a fatal form; when the tongue becomes dry and furred, the secretions cease abruptly and the patient falls into a comatose state, which soon ends in death. Puerperal insanity proper assumes the most diverse forms: mania in 47.8 per cent.; melancholia in 37.9; systematized delirium in 5.8; acute dementia in 5.5. Prognosis is favorable in most cases, more favorable in mania than in melancholia. Patients suffering from insanity after prolonged lactation usually present symptoms of extreme exhaustion. Prognosis is not unfavorable, but more grave than in puerperal insanity proper. Therapeutic inclinations are the same in all kinds of puerperal insanity. Treatment consists in the removal of all excit-

ing causes, a tonic régime, mild purgatives, injections of chloral hydrate and other soothing influences. (*Le Progrès Médical*, April 7, 1894; review in *British Gynæcological Journal*, Nov. 1894.)

SARCOMA OF THE UTERUS IN A WOMAN, AGED TWENTY-ONE. By Drs. LAVER AND WILKINSON.

The patient had a child three years previously, and had menstruated during lactation. Nearly two years after, she became pregnant, but miscarried at the third month. For five months she had a colored discharge, then a severe flooding, followed by profuse menorrhagia. The uterus was curetted; small round-celled sarcoma was discovered and vaginal hysterectomy was performed on October 4th. She recovered from the operation, the chart showing the type of pyæmia, though there were no metastatic abscesses. She however went home and died December 15 of the recurrent disease in the lungs. (*Quarterly Medical Journal*, April, 1894; review in *British Gynæcological Journal*, Nov., 1894.)

THE USE OF COCAINE IN RIGIDITY OF THE CERVIX DURING LABOR. By Dr. FARRAR.

The author has successfully employed applications of cocaine in two cases of rigidity of the cervix during labor. In the first case, which was a rather old primipara, its rigidity of the cervix prevented the progress of labor for forty-eight hours, and over which chloroform had no control. An incision of the cervix was decided on; the writer applied a tampon soaked in a 10 per cent. solution of cocaine in order to obtain a certain degree of local anæsthesia. Three minutes after, he removed the tampon and was surprised to find that the cervix had dilated considerably during this short

space of time. The dilatation continued rapidly and labor ended normally. The second case was a primipara, aged forty; an application of a tampon, imbibed with a ten per cent. solution of the drug, applied to the vaginal portion of the uterus, rapidly did away with the existing rigidity which had resisted for three days all the means employed to relieve it. (*London Obstetrical Society, Nov. 7, 1894; review in La Revue Internationale de Med. et de Chirurgie Dec. 25, 1894.*)

A CONTRIBUTION TO THE STUDY OF PUERPERAL GOITRE. By DR. J. C. MANGIN.

The author has had the occasion of observing a case of sudden death by asphyxia in a pregnant woman. As to the accidents which may be produced by the thyroid body in pregnant women, they may be classed as follows: (1) congestion of the thyroid; (2) simple inflammatory thyroiditis; (3) suppurating thyroiditis; (4) congestion of a preëxisting goitre; (5) simple or suppurating sturmitis of a preëxisting goitre; (6) progressive hypertrophy, with tendency to asphyxia, in a parenchymatous goitre. This is the "suffocating puerperal goitre." An infrequent accident dur-

ing pregnancy, due to a goitre, is fatal asphyxia. The case of the author is consequently most interesting in this point of view. The prognosis of puerperal goitre is consequently more serious than most writers believe. The treatment varies according to the variety of the classification here given. (*Paris Thesis; review in La Revue, Internationale de Médical et de Chirurgie Dec. 25, 1894.*)

**SYMPHYSEOTOMY WITHOUT SUTURE
By DR. BUSSEMAKER.**

The case was operated on by Professor Pagenstecher, of Elberfeld. The wound was simply dressed with antiseptics and healed in about a month. After two months, the ends of the symphysis could not be moved. It therefore seems proven that an efficient bone suture hastens the perfect reunion of the cut symphysis, but that this will also take place later without it, or a fibrous union results answering all purposes. The question of bone sutures or none was discussed at the meeting of the Wein Geburtshilfsfund Gynæhol. Gesellschaft, June 14, 1894. (*Centralbl. für Gynæhol. No. 37, 1894; review in British Gynaecological Journal, Nov., 1894.*)

BOOK REVIEWS.

All Exchanges and Books for Review should be sent to DR. C. G. CUMSTON, 326 Beacon St., Boston.

TRANSACTIONS OF THE NEW YORK STATE MEDICAL ASSOCIATION, 1893. VOLUME X. CONTAINING THE FIRST DECENNIAL INDEX.

The contents of this society's volume is full of interesting and important matter, both medical and surgi-

cal, and, although each memoir is of merit, we can only mention the most important on account of space. Nephrotomy and nephrectomy by E. D. Ferguson, M. D.; Placenta Praevia and Treatment, by Z. J. Lusk, M. D.; Discussion on Lesions of the Pleura, by Drs. McCollom, White,

Traux and Leale; an important paper on The Surgical Treatment of Pulmonary Cavities, by M. P. Dandridge, M. D. Fermentive Dyspepsia, by Austin Flint, M. D.; Bloodless Amputation at the Hip Joint, by John Wyeth, M. D.; brief comments on the *Materia Medica*, by E. H. Squibb, M. D.; a number of other good papers, complete this most excellent volume.

OBSTETRICAL NURSING. Third edition. By ANNA M. FULLERTON, M. D. P. Blakiston, Son & Co., Philadelphia, publishers, 1894.

NURSING IN ABDOMINAL SURGERY. Second edition. By ANNA M. FULLERTON, M. D. P. Blakiston, Son & Co., publishers, Philadelphia, 1894.

The two volumes before us, both by Dr. Fullerton, are intended for the obstetric and surgical nurse, and are well-fitted for their end. To detail their respective contents would be too long; but it may be said that all they do contain is well worth perusal. From the fact that they have attained respectively the third and second edition, indicates that they have been appreciated, and as the author's style is clear and easy, and the volumes abounding in practical suggestions, it is probable that another edition will soon be called for.

SEXUAL NEURASTHENIA. By DRS. BEARD AND ROCKWELL. Fourth edition. New York, 1895. E. B. Treat, Publisher.

A fourth edition of this remarkable book is quite sufficient to demonstrate the fact that it is appreciated by the profession. The interesting subject of which it treats is one that should be carefully and profoundly studied by every physician, who should be *au courant* with it. The present edition has been enriched by a chapter on Sexual Erethism, render-

ing the book still more valuable, if such could be the case.

OBSTETRIC SURGERY. By EGBERT H. GRANDIN, M.D., Obstetric Surgeon to the New York Maternity Hospital, Gynecologist to the French Hospital, etc.; and GEORGE W. JARMAN, M.D., Obstetric Surgeon to the New York Maternity Hospital, Gynecologist to the Cancer Hospital, etc.; with eighty-five (85) illustrations in the text and fifteen full-page photographic plates. Royal octavo, 220 pages. Extra cloth, \$2.50, net. The F. A. Davis Co., publishers, 1914 and 1916 Cherry street, Philadelphia.

As announced in the preface, the keynote of this volume is election in obstetric surgery. From beginning to end the work is clearly written and full of practical information. Commencing with a sound chapter on obstetrical asepsis, the authors lead the reader through obstetric dystocia, artificial abortion and premature labor, the use of the forceps, version, symphysiotomy, Cæsarean section, embryotomy, surgery of the puerperium, and ectopic gestation. Theoretically and practically the work is excellent, and we say without hesitation that we have not seen a better one on the subject, all things considered. It is illustrated by many figures, and fine plates make it still more clear and its large type and good paper and binding does credit to its publishers.

We are informed that the F. A. Davis Co. have in active preparation, a work which is to be a companion to Krafft-Ebing's famous *Psychopathia Sexualis*, by Dr. A. Schrenck-Notzig of Munich entitled "*Suggestive Therapeutics in Psychopathia Sexualis*." This coming work will, no doubt, attain the importance that Krafft-Ebing's now has.

ANNALS

—OF—

GYNÆCOLOGY AND PÆDIATRY.

DEPARTMENT OF PÆDIATRY.

A Cheap Form of Malt Diastase for Poor Practice.

E. CHANNING STOWELL, M. D.

BOSTON.

MUCH has been written for and against malt diastase as a therapeutic agent, but we still find the rank and file of the general practitioners prescribing it and sure also that they are doing good. There seems to be very good evidence that the diastase of malt or pancreatin, if administered just before a meal, or during the early part of a meal or if added to the food a short time before it is taken, does act in the stomach on the starches for a considerable time. We know that diastase will act in a slightly acid medium as well as in alkaline or natural solution. Heat over 170° F., and the stronger acid fluids, like the gastric juice during the latter part of a meal, destroy its energy. In many cases, besides the aiding of the digestive processes diastase seems to have besides a distinct tonic effect. Perhaps this is because it is a form of vital energy, as many think.

With the purpose of supplying a malt diastase of a cheapness to

warrant its prescription in out patient departments and in poor dispensary practice, it was suggested to use the formula given by Sir Wm. Roberts in "Coll. Contrib. on Digestion and Diet" (London, 1891). This, in infusion was used by him in his experiments and possessed marked efficiency and keeping power.

He takes three ounces or three heaping tablespoonfulls of *crushed* malt and mixes it well in æjus with half a pint of cold water. This is to stand over night ten to twelve hours in the cold. Then decant carefully and strain through three folds of muslin. If the barley grains are squeezed a little through the muslin, it adds a little to the value of the preparation as a food. This infusion must be used fairly quickly. If it must be kept some time, in order to prevent fermentation one must use as an extracting medium cold water and twelve to twenty per cent. rectified spirit, — the higher percentage

being necessary in the warm summer weather.

As to the cost: At wholesale barley malt of the best quality can be bought for eighty cents a bushel and will be retailed therefore at about ninety cents to one-dollar. So the expense cannot be very great.

This cold infusion of malt has been used during the fall in the chil-

dren's clinic of Dr. Harold Williams, at the Boston Dispensary, and to a slight extent in the dispensary districts. So far there is nothing but praise to be said for it; because, first, it is very cheap; second, it is as efficient as the higher priced articles; third, by reason of the rectified spirits it is still further a stimulant to digestion.

EDITORIAL.

Dr. Hartwell and the Condition of Health in Massachusetts.

Dr. E. M. Hartwell, Director of Physical Training, Boston Public Schools, in his report to the school committee, School Document No. 8, 1894, has made a decided and valuable contribution to medical literature and sanitary science. It is a report which should be read by all who are interested in pædiatry. After alluding to this first report, and briefly reviewing the progress of physical training in New England, Dr. Hartwell devotes several pages to statistics showing the increase in population of great cities. Especially is this found to be the case in Massachusetts, the "Commonwealth of Cities." Sixty-nine and nine tenths, per cent. of the population of Massachusetts, live in cities according to the census of 1890, and at the present rate of increase in ten years, time *eleven-twelfths* of our population will be city people. "The well-nigh universal belief that the influences and

concomitants of city life are prejudicial, on the whole, to continuous vigorous health seem to be well founded. The death rate of urban districts the world over is almost invariably higher than in country districts. This is especially the case as regards the mortality of infants and children." In Table IV. of the report, Dr. Hartwell compares the death rates per 1000 inhabitants of all ages of London, Boston and Berlin: Berlin, twenty-four and five-tenths; Boston, twenty-three and three-tenths; London, nineteen and one-tenth. In children of the school age, from five to fifteen years the figures are: Berlin, four and eight-tenths; Boston, six and six-tenths; London, three and nine tenths. In other words nearly twice as many children per 1000 of the school age die in Boston as in London! Making allowance for superiority of the English climate over that of the Mas-

sachusetts climate as is shown by the excess of mortality of Boston over Massachusetts as compared with the excess of London over England, and Dr. Hartwell concludes that among children *Boston's local death-rate appears to be fourteen times as great as London's local death-rate.*" The reason for these figures is that sanitation is less efficient in Boston than in London, and Boston has not kept pace with the advances in school hygiene and the application of its principles. "Among the agencies which are most effectual for promoting and conserving the health of growing children, muscular exercise may be fairly placed next to pure air, sunlight and a sufficiency of nutritious food." The importance of physical training is then insisted upon, in proof of which are cited the figures showing the improvement in the United States army by hygienic means. The structure of the body, the general effects of muscular exercise, its special effects, and its effect upon the nervous system are carefully considered. In relation to this latter effect, there follows an elaborate and exhaustive consideration of stuttering, the conclusion of which Dr. Hartwell says: "I am firmly persuaded that the presence of five hundred stammerers and stutterers in our public schools is an unnecessary evil, because it might be prevented and may be abated by simple, well approved, practicable measures."

In Dr. Hartwell's report is incorporated the report of Dr. C. L. Scudder upon the "seating" of school-children with the conclusions reached that the methods are faulty and productive of a tendency to spinal curvature, and the "Chauncy Hall Desk is favorably mentioned as an example to school authorities as what might be accomplished by school seats. Dr. Hartwell concludes his report in the words of Superintendent Philbrick of the School Committee: "Complete physical health and development is essential to the truest and best intellectual results of education All we have done in the interest of school hygiene during the past twelve years is far, very far, from being what we can safely accept as a satisfactory finality. It is in truth only a beginning of the vast work yet to be accomplished if we mean to make our system of education a complete success." In conclusion, we would say that Dr. Hartwell's report is the most complete and systematic public document on the subject which has ever come to our knowledge, and as a review of the study of the health in the Boston public schools, which are equal, if not superior, to any schools in the country, it should attract a widespread and careful perusal, and the suggestions of Dr. Hartwell should meet with a ready adoption upon the part of school authorities.

Foreign Bodies in the Heart.

IN a recent number of "*Les Annales de la Policlinique de Bordeaux*," Dr. Sengensse relates the case of a child aged three, who, after a fall remained unconscious for about a quarter of an hour. It was then discovered that a needle that was sticking in her waist was missing and it was thought that she had swallowed it. The following day she was restless, complained of violent pains when she breathed, and, upon careful examination, a lump was discovered over the fourth intercostal space, which increased in size at each cardiac contraction. On incising this prominence, the head of the needle was found; evidently the rest was sticking into the heart. The needle was easily extracted. It measured forty-two millimetres in length and had remained plunged in the heart for thirty-six hours, probably in the right ventricle. Recovery was rapid and uneventful. Needles and pins introduced into the heart without producing accidents have already been put on record. Projectiles of small calibre have been found encysted in the walls of the heart, hair-pins, needles, pins, an ivory tooth-pick (Barbier of Amiens,) a piece of wood three inches long (David,) and even still larger bodies. An interesting case is recorded by Tillaux in his *Traité d'Anatomie Topographique*. A maniac introduced a bar of iron, measuring sixteen centimetres in length, in the region of the heart. When Prof. Tillaux

saw the patient, the foreign body had disappeared, but the fingers could feel the rising up of the skin with each contraction of the heart. Other than rather rapid beats, there was no other trouble in the circulation. Believing that the piece of iron acted as a cork, thus preventing hemorrhage, Tillaux at first did not dare to remove the body; the next day it could hardly be felt, and soon could not be felt at all. The patient made such a good recovery that he tried again to commit suicide. He died the next year and it was found that the iron bar had traversed the anterior aspect of the left lung, the posterior wall of the ventricles, by penetrating the left side, and was at time of death engaged in the right lung. In animals, grains of shot are quite often found in the heart, and Plater found in a pig's heart the end of a small stick which had been pushed in six months previously. In certain cases the foreign body has only been discovered at the necropsy, and nothing during life had ever caused suspicion as to its being there.

Such cases have been reported by Lagier, Barbier (of Amiens), Peabody and others. Peabody found in the heart of a woman, who died at thirty-nine years of age of a mitral stenosis, a pin whose origin could not be discovered, and which had probably been for a long time in the organ. The pin was planted in one of the papillary muscles at-

tached to the anterior segment of the mitral valve, traversed this muscle and penetrated obliquely three centimetres deep in the wall of the ventricle. The question as to searching for and extracting foreign bodies in the heart has been discussed, when, as in the case mentioned, the thing is possible. Dr. Sengensse believes as Peyrot that, "allowing long and narrow foreign bodies to remain is at least as danger-

ous as to extract them, and that in this case abstention is not an absolute rule by which to be guided," and he concludes with Broca and Hartmann, that foreign bodies when lost should not be searched for, but that those, as in the case reported, which project exteriorly or under the skin, should be extracted. As to pointed instruments, success is not infrequent, as is shown by quite a number of cases.

The Relation between Tuberculosis and Diphtheria.

IN the Oct., 1894, number of the *Revue de la Tuberculose*, Prof. Léon Revilliod, of Geneva, published an article, in which he studies the relations which may unite these diseases, and which, according to the author, have a tendency to evolution in the same subjects. A soil that is good for diphtheria is also favorable for the development of tuberculosis. There is, in a word, a family temperament favorable to the receptivity of both these affections. Prof. Revilliod recalls in the first place the fact that he has already endeavored to demonstrate that diphtheria belongs to the same family as tuberculosis, and bases this conclusion on the frequency of family epidemics, in which it was impossible to attribute the contagion, either on account of the long lapse of time separating the attacks in different members of a family, or on account of the distance of the places from each other in which the attacks appeared. Since his first

writings, comprising fourteen families, in which several cases of diphtheria developed, in different countries or houses, and at times sufficiently long apart, so that all idea of contagion could be excluded, Revilliod mentions twenty-one new facts of the same kind, upholding this disposition of certain families to diphtheria. It should also be noted that Prof. Revilliod is far from admitting the great power of contagion that is generally attributed to diphtheria, and that he explains the isolated cases, spontaneous in appearance, by the latent microbism which may exist in Loeffler's organism, as in the pneumococcus, bacterium coli, and even in Koch's bacillus (Straus). Remaining in the latent state in predisposed families, it puts its activity into play under the influence of external or atmospheric causes, which give rise to malignant or benignant, localized or generalized forms of the disease, according to the receptivity of the

subject. The specificity of the "diphtherisable" soil being established, it now remains to demonstrate how this bears itself regarding tuberculosis. Now, from a large number of facts observed by Revilliod, it is shown that diphtheria and tuberculosis co-exist with a particular frequency in the same given family. Several writers have already shown the frequency of scrofula and tuberculosis in patients suffering from diphtheria. Sanné says that tuberculosis and the cachexiæ hold an important place among the diseases which prepare the road for diphtheria. A fact that has been demonstrated is that patients on whom tracheotomy has been performed hardly ever live over the age of twenty-five or thirty years; this may be because they often become tuberculous. Now, Prof. Revilliod has met with a goodly number of cases in which diphtheria was accompanied by tuberculosis, either in the subject himself attacked, or in his ascendants and his collaterals. This is what happened in forty-two cases out of the least two hundred cases of diphtheria observed by Prof. Revilliod; that is to say, that twenty-one per cent. of the diphtheritics in this statistic count in their respective families several cases of pronounced

tuberculosis. The author consequently concludes that not only does diphtheria favor the development of tuberculosis and *vice versa*, but that the same soil is favorable to both diseases. This is more than an ordinary coincidence, for if one considers scarlet fever, for example, it is at once seen that it is never combined with tuberculosis, although it grafts readily on a diphtheritic soil and *vice versa*. The facts observed by our former teacher, Prof. Revilliod, present great interest and will surely be the cause of other work in this direction. But as is stated in the *Journal de Médecine et de Chirurgie Pratiques*, issue of Dec. 10, 1894, the great objection that will be made until a large number of cases of this kind have been observed, is that tuberculosis is a disease so frequent that it is very possible that of the two hundred patients, tuberculosis might be found forty-two times in the families under consideration. And the same journal suggests that it would be interesting in this standpoint to compare diphtheria with some other disease of similar frequency, as, for example, typhoid fever, and investigate the number of cases of this latter disease coinciding with family tuberculosis.

Meeting of New York Academy of Medicine. Section in Pædiatrics.
December 13, 1894.

Dr. JOSEPH E. WINTERS, chairman.

Dr. MARY PUTNAM JACOBI presented a case of

CONGENITAL PTOSIS.

One eye alone was affected. At birth the eye was completely closed,

and so remained for two weeks. The child was, at the end of two months, able to open the eye about half. The lid seemed smaller and softer than that of the other side, and the whole eye seemed smaller. The case was peculiar. The lesions in such cases generally extend to all the external muscles of the eye. Numerous other cases were reported from literature, all without exception being bi-lateral. No cause could be detected, the child and parents being in perfect health.

DR. NORTHRUP said that the size of the eyeball was often deceptive when the eye could not be completely opened. If the child recovered, the ball would probably be found to be of normal size.

The subject for discussion was

TYPHOID FEVER IN INFANTS AND CHILDREN.

The first paper was read by Dr. William P. Northrup, on

PATHOLOGY AND OCCURRENCE.

The characteristic lesions of typhoid fever are changes in the lymph nodules of the intestine, the lymph nodes of the mesentery, and in the spleen. These changes are constantly associated with the presence of a special micro-organism—the typhoid bacillus. This germ is usually found in early cases in the contents of the intestines, in the lymph nodules and the mesenteric nodes, in the spleen and rarely elsewhere. The symptoms are believed to be due to a systemic poison developed by these bacteria. There is frequently a concurrent or mixed infection, giving rise to phenomena which are not peculiar to the disease.

In a paper read in 1892, the author made the following statements: "Typhoid fever in children under two years has never been observed in the New York Foundling Asylum as far

as the record shows." "The swollen Peyer's plaques, enlarged mesenteric nodes and spleen in children can not safely be interpreted like the same lesions in adults." Since that paper was written no case has appeared at the Foundling Asylum. Elsewhere the author has, however, seen an undoubted case of typhoid fever in a child just two years old, which he reported in detail. It was his wish to encourage a healthy skepticism as to all diagnoses of typhoid in children of two years and younger. He showed also a specimen illustrating the fact that the post-mortem findings of swollen follicles, swollen Peyer's plaques, and enlarged spleen might easily be misinterpreted. In the cases reported, the diagnosis rested upon these points: previous history of typhoid in the family; continuous fever with drowsiness or stupor; typical rose colored spots; enlarged spleen; constipation; moist, coated tongue; gradual return to normal condition during third week of illness.

The author's conclusions are stated as follows: (1) Typhoid fever is not a disease of infancy, *i. e.*, under two years, there being apparently much less susceptibility than in adults; (2) diagnosis rests upon the same points as with adults; (3) the spleen in infants must be felt below the border of the ribs to be pronounced enlarged; (4) enlarged mesenteric nodes, swollen Peyer's plaques, solitary follicles, and spleen in infants are not uncommon in cases where the clinical history excludes typhoid fever.

Dr. WILLIAM L. STOWELL read a paper entitled:

ENTERIC FEVER IN INFANTS AND CHILDREN, A CLINICAL STUDY.

The object of this paper was two-fold—First, to ascertain whether the clinical aspect of this fever differed essentially from the same disease in adults.

Second, to ascertain, in part from literature, if this fever attacked infants, and if so were the lesions characteristic in them.

For many years typhoid fever in children was described as infantile or intermittent fever. In 1847, Dr. Wood suggested the term enteric fever, which is now commonly used. Thirty-four cases were reported by the author, collected from large dispensary and private practice. These cases lead him to believe that the disease was not common in young children in New York. New York's annual mortality from typhoid was two and two-tenths per thousand inhabitants.

The shortest duration was ten days, the longest fifty-two, and the average twenty-three and eight-tenths days. The adult mean is twenty-eight and one-tenth (Osler); eight and eight-tenths per cent. relapsed or were reinfectd. Tympanites was nearly always present to a slight degree. Diarrhœa was marked in twenty-nine and five-tenths per cent. of the cases. A few were markedly constipated, but loose stools usually occurred a few times before recovery. Diarrhœa occurred in thirty-three per cent. of Osler's adult cases. Rose spots appeared in sixty-six per cent. of the cases. As to season, seventy-three per cent. occurred during the last four months of the year.

The endemic nature was illustrated by thirty cases appearing in six groups. The two youngest were twelve months and seventeen months respectively. The mean age was eight years. Fifty-nine per cent. were males. Epistaxis occurred in twenty and five-tenths per cent. The tongue was usually moist and coated except in those who had high temperature. The composite chart for temperatures of all the cases did not show as high a range as typical cases were supposed to have. Headache was present as a rule, though

comparatively mild in many cases. Violent delirium occurred twice and great stupor twice. Pneumonia occurred in ten per cent., but was not severe. Bronchitis was common. Alopecia occurred in convalescence as in results. Infants were not exposed to the poison of typhoid, but when they come in direct contact with the germs they were susceptible to them.

From these cases the following conclusions may be drawn:—First, the disease is not common in childhood; second, the types and varieties do not differ materially from those of adults; third, the term is shorter than in adults; fourth, the prognosis is better in children than in adults, there being fewer complications; fifth, in infants the mortality is high because the extremes of life are feeble.

HENRY D. CHAPIN read a paper on

TREATMENT AND MANAGEMENT.

The treatment of typhoid fever, must be based entirely on the type of fever present. When the fever is low and the symptoms mild, as they commonly are in children, very little medicine is required. Walking typhoid is especially common in children, hence relapses are especially common. Rest in bed should be insisted upon. It is often difficult to enforce this rule, but it will do much to insure a short course. The diet should be fluid, milk being preferred. One or two quarts may be given daily. Kumyss, matzoon, and buttermilk may all be used. Stimulants are rarely needed, but when indicated should be given as to adults. When the temperature is high cold to the head in the form of an ice poultice should be offered to the occiput and vertex. The child should be sponged with a mixture of water and alcohol at a temperature of sixty degrees. Constipation is the rule in children.

Dry masses are inclined to collect low in the bowels and are best removed by enemas. If diarrhoea appears bismuth is indicated. For indigestion, pepsin should be used. Aromatic sulphuric acid is an excellent remedy when the bowels are loose and the digestion impaired. Chloride of lime is one of the best and cheapest disinfectants, but carbolic acid, one in twenty, or bichloride solution, one in five hundred, may be employed. All soiled clothing should be thoroughly boiled. In some cases the bronchial mucous membrane seems to bear the brunt of the attack, when codeine in small doses proves of value.

Dr. R. C. NEWTON, of Montclair, who has had large experience in an epidemic, said that he believed that many cases of supposed typhoid in children were actually malaria. He believed that a close diagnosis was often difficult. In most cases seen in the recent epidemic a remission in the second week was very common in children. This was often misleading, and children who were allowed to get up were much more ill afterwards. The eruption varied greatly. In some cases but very few spots appeared. In others they were profuse, there being in one case 157 spots. The disease as it appears in children reminded him very strongly of "mountain fever" which he had seen in the West. He was inclined to think that typhoid fever could be sometimes aborted in the early stage by free doses of calomel, which would sweep the germs out of the canal. The last twelve of his cases had been treated with chlorine water and had done unusually well.

Dr. W. B. NOYES said that one evidence of the rarity of the disease in young children was the fact that in over two thousand autopsies which had recently been reported but six were under two years. It was, however, in his opinion more common

than was generally believed, for most of the cases recovered. The prodromal symptoms in children are not marked or distinctive. A number of cases were reported by the speaker.

Dr. A. SEIBERT said that the use of the term "enteric fever" should be discarded, as it means simply an intestinal fever. There are many forms of intestinal fever. Typhoid fever is due to the typhoid bacillus, and should receive that name. He believed neither children nor adults should be allowed to take raw milk. If the children in Montclair had received boiled or sterilized milk, they would not have taken typhoid fever. Systematic irrigation of the rectum, not of the colon, once or twice a day was an important matter of treatment. The disease was due to absorption of the poisonous products of the germs. Absorption from the rectum was rapid and the disease could be materially modified if it was kept clear. It was well known that the severity of the disease was in proportion to the number of bacteria present. He said that he gave no milk to typhoid fever cases and found these patients did much better. He fed his patients on soup, broth and stimulants and sometimes tea and coffee. He gave no antipyretics and no quinine, but always gave calomel in the early stages.

Dr. H. KOPLIK said the importance of making the differential diagnosis between typhoid and malaria by examination of the blood was great. Outside of epidemics, he believed that typhoid was extremely rare under two years.

Dr. A. JACOBI did not believe that typhoid was uncommon in young children. Many reported autopsies were from hospitals which did not receive children. Children readily escaped typhoid because they took little water, and what they did take was usually boiled. Their bowels were loose, as a rule, and the germs fre-

quently passed without infecting the patient. Children bear typhoid temperatures remarkably well. It was not uncommon to find a child with high temperature in this disease desirous of getting out of bed.

Dr. C. G. KERLEY, for three years resident physician of the New York Infant Asylum, said that he had never seen a case of typhoid under two years, and had not seen the lesions of the disease in four hundred and fifty autopsies.

The Chairman said that he should be sorry to have the section believe that typhoid fever was so extremely rare under two years. He had seen the disease at that age.

Dr. W. P. NORTHROP said that he should be sorry to have the section go away with the idea that typhoid fever is common in infants. The New York Foundling Asylum cares for over eighteen hundred patients every year. Eleven hundred are cared

for by nurses outside of the institution, and are circulating about the city in every locality. When they are ill they come back at once to the asylum. Why do they never come back with typhoid? Not a case under two years has returned with typhoid fever in twelve years of his experience, and twice that of Dr. O'Dwyre's. In over two thousand autopsies made by the speaker on these young children, not a solitary case has been found. He did not mean to say that an infant could not have typhoid fever; but he did mean to say that it was not common, and that it seldom occurred sporadically. In overwhelming epidemics, such as that in Montclair, and such as Earle reported from Chicago, the facts must be accepted, while still maintaining that it is not a disease of infancy, and not common under two years of life.

REVIEW OF PÆDIATRY.

Dr. Andrew MacPhail, Professor of Pathology and Diseases of Children, in the University of Bishop College, Montreal, gives an interesting account of an epidemic of paralysis in children, with a report of one hundred and twenty-five cases. These cases, which might be classed as cases of "polio myelitis anterior acuta," occurred in the State of Vermont in an area of fifteen by twelve miles, of which the city of Rutland is the centre. The epidemic began in June, increased in July and culminated in August, and, though cases occasionally occur, yet the malady has now almost abated. Of the cases reported, thirteen were fatal, twenty-five recovered, thirty improved and thirty-

two unmarried unimproved. The general characteristics of the attacks seem to have been fever and headache, followed by paralysis of one or more of the extremities. This paralysis, which in every case was motor, has persisted in about one-fourth of the cases and in many has been followed by autopsy. No cause could be discovered for the cases, and in no case could an autopsy be procured. (*Medical News*, Dec. 8, 1894.)

An excellent article appears "On the care of the ear during the course of the exanthemata" by Walter Downie, M. B. In an analysis of five hundred and one cases of tympanic disease

26.1 per cent. originated during an attack of measles.

12.6 per cent. originated during an attack of scarlatina.

8. per cent. originated during an attack of whooping cough.

.6 per cent. originated during an attack of mumps.

29.4 per cent. were catarrhal in origin.

20 per cent. originated during eruption of teeth.

1.6 per cent. were syphilitic in nature.

The writer considers these cases for the most part due to occlusion, of the eustachian tubes, caused by the secretion of catarrhal products and causing retained secretions in the middle ear. He accounts for the prevalence of middle ear symptoms in the exanthemata to the fact that the child is kept in bed and for the

most part lies in a dorsal position which favors a retention of secretions within the hollow of the nazo-pharynx. "From the very beginning of the illness," he goes on to say, "when there are any catarrhal symptoms, the patient should be directed to use the handkerchief frequently and strongly and the nurse in attendance should see this carried out." If the child is too young he advises Politzer's inflation bag. He regards the danger of rupture of the tympanic membrane in cases of intense inflammation as less than the danger to be feared from the retained secretions. (*British Medical Journal*, Nov. 24, 1894.)

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Ectopic Pregnancy—Extra Tubal.

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A fair discussion of any one of the pathological conditions known and called ectopic gestation demands more than a passing notice of them all. The generic term is a synonym for the abnormal, a deviation from nature, and a tendency to evil results. To a perfect organism it is deemed impossible, and yet it has happened in cases where it is impossible to trace an exciting, predisposing cause. In these, the auto-genetic cannot be excluded.

To the materialist, he who must trace an inward effect from an outward cause, this statement will be challenged as heterodox, but to the broader and more comprehensive view, it has a place in an etiology. Along with constitutional immunity, must be recognized auto-infection, waywardness of nature and the unexpected. A perfect tenement of the soul would bid defiance to all causes

of its destruction from without or within, and decadence would be impossible and we would live on forever. Such evidently was not designed in our architecture, and the structure of our bodies has been left weak in places and imperfect in form. This inherent vulnerability ever makes us a prey to the destroyer, and natural processes are perverted.

It must be admitted at the outset that nature's design is that the ovum should be fecundated and find lodgement within the uterine body, where the anatomical arrangements and physiological processes will best subserve the interests and well being of both mother and offspring. Reviewing the construction of the female generative organs, how the graafian follicle, breaking away from its moorings, starts on its migratory journey to meet its affinity, depending upon the fimbriae and ciliated epithelium for its safe arrival at its destination, it is not surprising that it is

1. Read before the meeting of the Western Association of Obstetricians and Gynæcologists, at Omaha, Dec. 27, 1894.

more frequently lost to its natural course, and is it unreasonable to suppose that its fecundating mate, weary at its long delay, starts in search for that upon which depends its future existence? Failing to see the object of its mission in the avenue of its natural travel, "nothing daunted," it presses onward to greater depths until it overtakes the maternal germ. Granting that "the normal function of the ciliated epithelium is to carry all the tube contents toward the uterus," it must be granted that it often fails of its mission in cases where no trace of destruction of the cilia is discoverable, where there exists no history of preëxisting tubal disease—in the primiparous woman—in the healthy woman, with previous pregnancies normal. No class or station in life is exempt from this accident.

The experiments of Dode, in which he injected an emulsion of charcoal into the abdomen of a rabbit and after several hours found the tubes filled with particles of charcoal, and his further experiment of injecting the *ova ascaris lumbricoides suis* into the abdominal cavity, after which in twelve hours he found large numbers of these ova in the tubes, does not establish the theory of Tait as to ectopic pregnancy being the result of former tubal trouble with the destruction of the ciliated epithelium. They only prove nature's way, which is not constant or invariable. If these experiments of Dode were conclusive, there would be no such thing as ovarian, tubo-ovarian, tubal and abdominal pregnancy, or tubal abortion in women with healthy reproductive

organs. Dode claims that an ovum which had escaped into the abdominal cavity would be taken up by the tube and carried into the uterus.

Whatever may be the consensus of professional opinion in reference to Tait's theory as to the etiology of ectopic pregnancy, it must be conceded that the majority of these cases are primarily tubal and become intra-ligamentous and abdominal by rupture secondarily.

Accepting Tait's theory, it is difficult to reconcile the apparent inconsistency that many cases which are claimed as primarily abdominal, are in reality the result of tubal abortion, for it should, in a spirit of fairness, be admitted that a condition of the tube which would permit the escape of the fecundated ovum would also favor the escape primarily of the fecundating material.

The escaping fecundating material may be brought in contact with the mother germ, just as it emerges from the tubal ostium, and constitute what may be called fimbriated pregnancy, and not necessarily tubo-ovarian, and yet it may never break away from its attachments,—but form additional attachments to the abdominal parietes, and be walled off from the general abdominal cavity.

The skepticism expressed by Lusk, Beale and others as to the existence of primary abdominal and extra-tubal pregnancy, where the tubes are intact, and not in communication with the sac, make this question a debatable one.

The varied symptomatology of ectopic gestation makes a diagnosis

difficult and frequently impossible. It can be truthfully said that there are no pathognomonic signs of ectopic pregnancy.

The differential diagnosis between ectopic pregnancy and oöphoritis is often perplexing. Both conditions cause pain — both are accompanied with hæmorrhage of uncertain duration and irregular return. A differential diagnostic sign has been pointed out by Vertsinski, Thomas and Lebedoff, which they claim as characteristic, viz.: the varying size of the tumor in inflammatory conditions of the tubes and ovaries — “the tumor sometimes is as large as an orange, and in only a few days it can hardly be defined,” and this periodical variation in size is closely connected with menstruation and ovulation. The same condition has been observed in a case of ectopic pregnancy.

While the expulsion of the decidual membrane is considered a valuable symptom, Lusk says that it is not a constant occurrence.

The American text book of gynecology divides the diagnosis of ectopic gestation into two periods.

First.—Prior to tubal rupture or abortion.

Second.—Subsequent to tubal rupture or abortion — but claims that “mistakes in diagnosing ectopic gestation are bound to occur, even with the most careful, from the fact that the condition is sometimes found at operation, when not a period has been missed, and not a symptom of pregnancy has been presented.”

Irvine S. Haynes, in a recent article on the diagnosis and treatment of

tubal pregnancy, says: “All writers are unanimous in stating that the diagnosis is comparatively easy after rupture has occurred, and they are just as fully agreed that the diagnosis is difficult and uncertain previous to this undesired event.” He asks the question, “Can tubal pregnancy be diagnosed previous to rupture? If it can, what are the pathognomonic signs?”

In tubal or tubo-ovarian pregnancy, rupture occurs between the third or twelfth week, and more frequently near the eighth week, at which time the tubal ostium is closed by the resulting congestion.

Dr. Andrew F. Currier says: “The mere presence of a tubal tumor, even if it contains blood, is not, in my opinion, evidence of gestation.”

Smith says: “A positive diagnosis cannot be made within the first eight weeks without an exploratory incision.”

Haynes says: “Absolute demonstration is possible only by an exploratory cœliotomy.”

As to the treatment of these cases, two methods have been adopted, viz., electricity in the earlier months of gestation, and surgical treatment. It has been advocated by those who favor the electrical plan, to resort to the treatment before the fourth month. The success attained by McGinnis, Brothers and many others, demands recognition and consideration. Brothers reports 78 cases with one death. But surgical interference certainly offers the best hope for the patient.

When we remember that in ectopic pregnancy rupture may take place

prior to three weeks (and if it be tubal, always before the eighth week), the arguments of those who advocate the use of electricity fall to the ground. Added to this is the statement by competent observers, that "it is often impossible to make a correct diagnosis," except by exploratory incision. It must be evident that anything short of surgical interference must be tentative and uncertain.

Werth says; "that ectopic pregnancy is always to be regarded as a malignant growth and should be treated as such."

The foregoing has been considered by the writer as a necessary preliminary to the report of a case herewith presented. History furnished by her husband.

Mrs. H., wife of a worthy and reputable physician of Kansas City gave birth to her first child in 1888. Sub-involution with hæmorrhage in the third week, and anæmic neuralgia—complete recovery, after which menstruation was regular and health good. Had a miscarriage in 1890 with considerable hæmorrhage—recovery—subsequent menstruation regular, except a few days variation at each period. From January to May, 1894, suffered with uterine prolapse. Had painful menstruation about May 3d. Next period in June was painful and she had to go to bed. Uterus swollen and soft, with leucorrhœal discharges and slightly stained with blood. June 6th, Dr. M. curetted the uterus and brought away some fungoid granulations, which were not submitted to microscopic examination. Uterine cavity $4\frac{1}{2}$ inches deep.

Considerable tenderness over the region of the uterus followed, with pains simulating uterine contractions. Also pain and sensitiveness over region of left ovary. Temperature 99° to 101° , constipation, vomiting from June 1st till August first. At this time I was called to take charge of the case in the absence of Dr. M., who did the curetting, consequently an imperfect history was obtained.

I found the uterus $4\frac{1}{2}$ inches deep, somewhat fixed, induration around the uterus, but no well-defined mass. Under local treatment, rest and nutritive and sustaining treatment, patient made decided and progressive improvement, and in ten days the uterine cavity measured three inches.

I should have said, that there had not been at any time mammary enlargement, shock or other symptom of rupture. The question of extra-uterine pregnancy was discussed and laid aside. August 10th, had an attack of apparent pelvic peritonitis with gaseous distension of the abdomen, which subsided in twenty-four hours.

In my absence from the city, Dr. Robert T. Sloan attended the patient for two weeks, in which time she did badly. On my return a consultation of the following physicians was called: Drs. Sloan, Massie, Halley and myself. We found the patient in a deplorable condition. Uterus was fixed, enlarged and retroverted, with a mass in front of and to either side of the uterine body. Temperature ranging from 99° to 102° , pulse 90 to 100, bowels constipated as a result of the inflammatory exudation in the pelvis and immediately in

front of the sigmoid flexure of colon and rectum.

The question of the possibility of an ectopic gestation was again discussed and its existence agreed upon, and operative interference advised as soon as the patient's condition would permit, she being very anæmic.

From this time, August 23, there was such progressive improvement that Dr. Sloan and myself recanted in our opinion as to extra-uterine pregnancy. The masses gradually disappeared, fever subsided, pulse became normal and appetite restored, patient cheerful, and we had begun to felicitate ourselves upon the prospective early recovery of our patient; but about September 30, she had a sharp attack of pelvic inflammation with marked increase of mass to left and behind the uterus. On October 2, Dr. Crowell was called in consultation, and agreed with Dr. Sloan and myself as to the advisability of surgical interference, and on October 4, with the assistance of Drs. Sloan, Massie and Crowell, we proceeded with every anti and aseptic precaution, by first puncturing the abscess in Douglass' cul-de-sac, and emptying about two ounces of fetid pus. As this did not affect in the slightest degree the mass to left of the uterus, Dr. Crowell, at my request, made an incision into it, superior to and parallel with Poupert's ligament, and rapidly removed the contents of gestation sac, consisting of bones, placenta, disintegrated tissue and offensive material. This sac was attached to the abdominal wall in the inguinal region, and was practically extra-peritoneal.

The patient rallied well from the operation—a fecal fistula was developed, but gave no special trouble and was soon practically healed with only a narrow sinus remaining. Indications pointed to the recovery of the patient, when, on October 11, septic pneumonia developed and she died on the 14th.

Some perplexities arose in the diagnosis and treatment of this case, which were insurmountable and are to be regretted.

1st. Owing to the fact that the product of the curettage was not examined microscopically, whereby decidual membrane might have been detected and a diagnosis made.

2d. The varying size of the masses which occurred several times during the progress of the case was misleading.

3d. This marked reduction of size and tension of these masses took place at a time when she had uterine hæmorrhagic discharges, which is so characteristic of inflammatory tubal diseases.

The final extreme condition which demanded surgical interference, resulted evidently in infection of the posterior mass from the rectum, and while no communication could be discovered between this pus cavity and the gestation sac, yet the proximity of these two cavities was such, that infection must have occurred from the one to the other.

Despite the extreme prostration of our patient, we were justified in the hope that she would recover, until the septic pneumonia supervened. Wounds never did better, or cavities granulate and contract more rapidly.

Autopsy showed that the gestation sac was attached to the fimbriated extremity of the tube simply, and not tubo-ovarian, with no evidence of tubal rupture. In the absence of

signs of distortion of the tubal ostium, we were forced to conclude that this case was one of primary extra-tubal pregnancy.

Parietal Fibro-Myomata of the Uterus, and Professor Vulliet's Operation for their Extraction.

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CONTINUED FROM JANUARY NUMBER.

III. REPORT OF CASES.

I SHALL divide our cases into four categories—1, the cases where there was incision followed by spontaneous enucleation; 2, those where incision was followed by partially spontaneous and partially forced enucleation; 3, operations in which the incision was followed by neither spontaneous nor forced enucleation; 4, cases of dilatation without incision.

The first series is composed of four cases which are reported as follows by Prof. Vulliet:—

CASE I.—“In 1882 I made my first operative attempt, and under these circumstances: Treating a lady for grave hæmorrhages that were not arrested by any of the usual methods, I made a digital exploration of the uterine cavity. After the procedure already indicated I discovered in the superior part of the posterior wall a discoid tumor, having the diameter of a half-dollar. It had the con-

sistence usually presented in fibromyoma; consequently it was distinct from the consistence of normal uterine tissue. This tumor gave me the impression of being nearer the mucous than the serous membrane. I knew that sacrifice of the mucous membrane covering a fibromyoma is an excellent means of producing hæmostasis. My patient was in danger. I then decided to profit by the dilatation for incising the mucous membrane of the uterus. I made an incision longer than the diameter of the tumor, and deep enough to reach the new growth. No accident occurred. The hæmorrhages stopped; the periods came back at their time in usual quantity. I intended to follow this case, when I learned that my patient had left Geneva without informing me. Six months afterward I saw her again; she was in perfect health. By bi-manual exploration I found the uterus was normal in shape and size.”

CASE II.—“In June, 1882, I performed a similar operation for a fibroma, having the diameter of a dollar. It protruded slightly into the uterine cavity. The layer of tissue covering it was extremely thin. This, then, was not a typical intraperitoneal fibro-myoma. Nevertheless, the greater part of the mass was encased in the wall, and it had the greatest resemblance to an interstitial fibroma. The incision did not give rise to any accident. The neoplasm began to come out of the cervix at the end of a week. I made frequent antiseptic injections, and attentively watched the descent of the flaps, and as by degrees they reached the vulva I resected them, after which the vagina was dressed with iodoform gauze. The elimination was completed at the end of three weeks. No fever existed.”

“These two cases were in private patients; I mention them because they prove the harmlessness of the incision, and also because they explain how I was led to deliberately attack small fibro-myomata entirely intra-parietal—that is to say, at equal distance from the mucous and serous membranes.”

CASE III.—“In the month of February, 1883, while replacing Professor Vaucher at the Maternity, I had the opportunity of performing a third operation. Ida W., servant, unmarried, aged forty-four; had one child twenty years ago. The child, she said, was very large; she was three months getting well. About the age of thirty-seven her monthly periods, which had been up to that time normal, became more frequent and abundant. In her thirty-eight year she

had during eight months, and in her forty-first year during six months, a complete suspension of her terms; but except on these two occasions the menstruation took place every twenty-one, and even every fifteen, days. In spite of her approach to the menopause, her periods increased in frequency and abundance. In December, 1883, and January, and February, 1884, she bled without interruption, even when lying down. It was this that made her come into the Maternity. When we saw her in February, 1884, she was very thin, pale, and decidedly ‘cachectic. The uterus is double the normal size, and not painful. Unable to work, she demanded treatment at any price. In the first clinical lecture I set forth the reasons which, under reserve of any results from the intra-uterine examination, led me to diagnose the tumor as a fibro-myoma.

The following day the patient was anæsthetized, and we examined the uterine cavity by direct digital examination. The night before a sponge-tent was introduced into the cervix. When the patient was anæsthetized I brought the cervix into view with a speculum, and seized one of its lips with a pair of my forceps. The tent being withdrawn, I introduced the index finger as high as possible into the uterus; then by a gentle but continued traction I lowered the organ until my finger touched the fundus. Then confiding the forceps to an assistant, keeping the uterus down, I found, by utero-abdominal bi-manual exploration, a spherical, flattened mass in the anterior wall, well defined and hard, of a consistence analagous

to that of fibro-myomata. The uterine cavity showed no deformity of its walls, no projection; only the exterior surface of the anterior wall, instead of presenting its normal curve forwards, seemed, on the contrary, convex and globular. I asked Dr. Fontanel to make an intra-uterine examination, and let him note all these particulars. My diagnosis was then confirmed: I had to do with a fibro-myoma of the typical intra-parietal variety. It seemed disposed to develop rather more into the abdominal than into the uterine cavity. I had a very clear idea of the thickness of the tissue covering the neoplasm. Encouraged by my previous experiments, and convinced of the harmlessness of an incision of the uterine wall, I decided to try to change the direction of the migration of the neoplasm by giving it an easy issue into the uterine cavity. An incision was also justified as a means of hæmostasis.

I made an incision with a button-end bistoury, about a centimetre deep, beginning at the fundus uteri, and ending a centimetre above the external orifice. The hæmorrhage was insignificant. The uterus was irrigated with a $\frac{1}{1000}$ sublimate solution, and was tamponed as well as the vagina with iodoform gauze. Two days after Professor Vaucher transferred the patient to his ward, and I did not see her again. I heard that a parametritis developed, from which she recovered perfectly. At this time the Maternity was infected, so that this complication is not to be wondered at. We took all possible measures, but without

success. Infectious complications continued to appear after energetic measures were taken by Professor Vaucher. Four months and eight days past without news from this patient, when she came to the consultation at the Policlinic. She said that she lost no blood during the week following the operation; but at the end of the week the hæmorrhages, although not so profuse as before, appeared two or three times a month. They diminished afterwards, and during the week preceding her first visit to the Policlinic no blood was lost. She only mentioned abundant whites flowing, without smell, during this last period.

When I placed the patient in the examination chair I was in no way satisfied with the result of my operation—parametritis and return of the hæmorrhages; but the minute my finger touched the cervix my ideas changed. I felt, crowded between the lips, the inferior segment of a polypus, free on all its periphery, except in front, where it adhered to the cervical wall, exactly at the point where my incision ended. By penetrating into the uterus I found the same state as high up as my finger could reach. The polypus was free everywhere, excepting at its anterior part, from which the pedicle started, inserting itself on the entire length of the anterior wall, precisely where I made my incision in the month of February. This pedicle was the same length as my incision. I cannot complete my description better than by comparing this pedicle to the mesenteric attachment of the intestine. I insist on this particular disposition of the attachment of the

polypus, because it proves that there was only a simple coincidence between my operation in February and the presence of a uterine polypus in June. *Per speculum* the polypus was well seen, as well as its inferior implantation on the anterior lip. I could have immediately performed ablation of the polypus; nevertheless, I explained to the students the reasons which caused me to defer it. There was no urgency for operating, for the patient had lost no blood, and no signs of inflammation or infection were present. On the other hand, there were the following disadvantages: the equator of the polypus had passed the internal orifice, so that the uterine contractions could, in the future, act with more energy on the bulk of the neoplasm. These contractions could, in lengthening, transform the membranous pedicle into a funicular pedicle, and accomplish the passage of the neoplasm out of the wall in the first place, and out of the uterine cavity afterwards. Once the tumor is completely isolated from the wall, the operation would be simpler and the chance of infection less.

Ergotin was prescribed internally, and tampons of tannin and injections of sulphate of copper locally. In July, Ida W. entered the Maternity, and I removed the polypus. The extirpation was very simple; the mass weighed about ten grammes. I saw the patient often. She has since gone back to her work as a servant, with health considerably better. The menstruation is very irregular and far from abundant. The uterus is very small in volume, as if it had undergone a certain decree of atrophy.

En résumé, the case was one of a small fibro-myoma, which, interstitial in February, became intra-uterine in June; this transformation was due to the incision. This incision weakened the resistance of the muscular layer existing between the neoplasm and the uterine cavity, and had given a preponderance to the layer between the neoplasm and the peritoneal cavity. Nevertheless, the migration of the neoplasm was not of sufficient rapidity to hinder the intra-uterine mucous membrane from cicatrising, otherwise the fibro-myoma would have immediately been expelled, and no polypus would have formed."

CASE IV.—Mrs. M. G., from St. Girod, aged thirty-seven; married at nineteen; had had neither child nor abortion. At the beginning of 1880 she noticed that her abdomen swelled. Since this she experienced difficulties in passing water, which became gradually more pronounced, and suffered continually with pains in the kidney. In June, 1887, had abundant metrorrhœa, and the "flowers" commenced. Dr. Rosset found a uterine tumor, and ordered a subcutaneous injections of ergotin. She came to Professor Vulliet in August, and he found a fibroid tumor of the uterus, and told the patient to go home and continue the injections of ergotin, and advised, in addition, daily *seances* of electricity (fifteen minutes). She returned a month later. The situation, instead of being better, was sensibly worse. The patient suffered from sharp pains in the abdomen, obstinate constipation, and great difficulties in making water; she could not attend to her

work. She entered the private clinic of Professor Vulliet.

General state good; abdomen projecting. Local condition — voluminous fibroid tumor obstructing the pelvis, pressing on the rectum and bladder, and reaching above the umbilicus. Cervix could not be found; the finger could not be insinuated behind the symphysis to search for the cervix. Retroversion of the uterus very pronounced; reduction was tried in vain, the body would not tilt above the promontory. Vulliet tried, at three different times, to reduce the organ. The fourth day all was prepared for a laparotomy: nevertheless, when the patient was profoundly anæsthetized, the professor made a last effort in taxis. Pushing above brought about no displacement. Pressing in the other direction was tried; he felt the uterus slip lower down. He then made alternative pressures on the abdomen and *per vaginam*. The uterus gradually became more movable in both directions, and suddenly it passed the promontory and took its normal position.

The tumor was then more prominent; it extended about three fingers' breadth higher than before the reduction; it seemed, in the first place, as if there existed a tumor on both horns of the uterus. The cavity measured twelve centimetres, and had a curved direction, with concavity forwards. Dilatation was practised, introducing first Hegar's small bougies, then with strips of laminaria cut in form of urethral sounds. These were withdrawn the next day, and replaced by nine large iodoform tam-

pons. At the end of eight days the cavity was well open. Vulliet found, by intra-uterine touch, combined with abdominal palpation, an interstitial fibroid of the posterior wall, and general hypertrophy of the walls. An incision was made in the tissues covering the part where the fibroid was found; then the uterus was tamponed.

The prominences felt at the right and left on the fundus diminished in size during the following days; the left horn remained more developed. These projections were attributed to a median furrow due to a long pressure of the promontory on the middle of the extremity of the uterus.

The tampons were changed once every two days. At the third dressing, the woman having felt the preceding day some expulsive pains, about fifteen grammes of pieces of fibro-muscular tissue came away; and after this, each time the dressing was changed, *débris* of the same nature was found. The uterus still remained voluminous, but the tumefaction of the left horn formed the essential part of the abnormal development. Vulliet decided to make a second incision over this local enlargement. Hardly had the knife penetrated into this part when a flood of blackish, slimy blood escaped. The appearance of this blood clearly indicated that it was a product of retention. It was very probably a local hæmatometria, produced by the closing of the uterine walls unexpectedly on account of the compression which was produced when the tumor was imprisoned behind the promontory. Vulliet introduced his fingers and enlarged the opening. The return of this diverticulum to

the cavity of the uterus caused a depth of fifteen centimetres of same.

Tampons were placed up to this diverticulum, and daily intrauterine dressings were made for a week (irrigations, tamponing, &c). Faradization and ergotin were ordered, and two weeks after the operation the uterus had undergone such an involution that it reached only two fingers' breadth above the symphysis. The patient then returned to her home. I learnt that when there she was in bed for two weeks for a *phlegmasia alba dolens*.

It is evident that a series of manœuvres cannot be performed in the uterus, such as had been accomplished, without exposing the patient to some of the slight complications of labor. The fact of having found a local hæmatometria in the living is rare. Professor Zahn, to whom I mentioned the fact, said that he had sometimes found the phenomenon at the autopsy. The case is doubly interesting—first, the patient demonstrated that *retroflexio uteri fibrosi* is a complication which, so far as surgical interference is concerned, renders the operations more difficult, the more so if the retroflexion of the gravid uterus compromises gestation and labor. The reduction of the uterus is the first indication to fulfil, and it may certainly often be accomplished by a persevering and well-combined taxis. On the other hand we were placed face to face with a case which is such as not to admit of a laparotomy — the indication was urgent to intervene. Now, a laparotomy performed under the circumstances was of a nature to change the

statistics of operations for fibro-myomata in a favorable direction.

Second series: Cases where incision was followed by enucleation, partly forced, partly spontaneous.

CASE V.—Miss Sophie P., aged forty-three, unmarried, virgin; has suffered between twenty to thirty years from chloro anæmia, and had small-pox in 1871. Since the commencement of 1884 her menstruations have been painful and abundant. Two years later intermenstrual loss of blood and a discharge of yellowish-white secretion commenced. Since April, 1886, Miss P. has had fearful pains between the umbilicus and the pubes, extending towards the kidneys, and particularly towards the right hip. Dr. Rolland, of Divonne, found a uterine tumor, and put his patient under a palliative treatment, consisting of sitz baths and astringent injections. He sent her to Professor Vulliet on September 17, 1886.

General condition — thin, face pinched, abdomen perfectly round, as in a six months' gestation. Local condition — cervix dilated to the size of a sixpence; inferior segment of uterus globular. The finger introduced into the uterus feels a hard and elastic tumor; the organ reached two fingers' breadth above the umbilicus. Dilatation — intra-uterine examination reveals a fibro-myoma, a conical portion of which projects into the cavity; and another, much more considerable, is found in the superior part of the posterior walls of the organ. In other words, then, the bulk of the tumor is incased in the uterine muscle, and its point projects into the uterus.

The patient was etherized for the exploration. Profiting by the circumstances, Professor Vulliet washed out the cavity with a solution of corrosive sublimate at $\frac{1}{1000}$ per cent., and securing the cervix by claw-forceps he split it by two lateral incisions; then sliding a pair of long, curved scissors along two fingers introduced into the uterus he commenced a resection of the tumor at the base of the projecting part; then seizing the top of the new growth by a tenaculum it was drawn down, and the resection was continued until it became circular. By traction the neoplasm came down. The incision was stopped when it was found dangerous to cut higher. Vulliet thought that he could remove about a quarter of the tumor as it was; the rest remained imprisoned in the wall. Instead of trying enucleation, which was difficult and dangerous on account of the situation of the tumor, it was decided to leave the further elimination to spontaneous enucleation. The cavity was washed out with sublimate and stuffed with iodoform tampons; the dressings were changed every two days. A discharge was established, resembling such as is seen after a normal labor, with this difference, that in it were found pieces of fibrous tissue.

The patient having felt, at different times, expulsive pains, a second examination was made at the end of the month. The greater part of the tumor had entered the uterine cavity. It was drawn outside by forceps, and the attachments which held it back were cut through with scissors, and, after an operation of about half an hour, it was entirely

removed. In this case we had to do with a fibro-myoma, partly sub-mucous, partly intra-parietal. The circular incision made around the projecting part of the tumor and the ablation of this part may be considered as a resection. The intra-parietal part, under the influence of expulsive pains, was afterwards pushed into the uterine cavity. It is evident that immediate efforts to enucleate would have failed. By the permanent dilatation, uterine action was produced by the tampons remaining in the organ, which provoked and facilitated the expulsion, at the same time the iodoform cotton assured asepsis and drainage. The patient was seen in December, 1887, and was in perfect health.

CASE VI.—February 24, 1887. Professor Vulliet was called, in consultation, to see Mrs. G., aged thirty-six, married fourteen years, and a multipara. For twelve years the patient has suffered from her uterus, her abdomen gradually increasing in size. Having consulted many surgeons, she is made aware that she has a fibroma of the uterus. Since August 1886, the menstruation—up to that time regular and normal—has completely stopped, and the abdomen has become more swollen. She said that the doctors she had consulted were in doubt as to gestation. During the week before my consultation she had, at several times, symptoms like those of the commencement of labor. It was under these circumstances that she summoned Dr. W., who called Professor Vulliet into consultation. After a most careful examination Vulliet made a diagnosis of a gestation

tation, the fœtus dead, and could not be expelled on account of a tumor. The following day a new labor commenced, and a foot was presented at the external orifice. The extraction offered no difficulty, and a fœtus of about five months, dead for some weeks, was found. To effect delivery the introduction of a hand into the uterine cavity was required. Profiting by the circumstance, Vulliet palpated the tumor between his hands, and thus determined its size, consistence, and, above all, its relations with the walls of the uterus. It was a typical interstitial fibroma of the anterior wall. It extended above to the fundus uteri, and below up to the internal orifice; the cervix, strictly speaking, was normal; the convexity of the tumor faced the serous membrane; in the mucous membrane there was no marked projection; the neoplasm was hard and resistant, and not elastic, being the size of a large orange. Upon this ground the patient declared that she had decided, for some time past, to undergo a radical operation, and decided to have it performed as soon as she recovered from the abortion.

The size and abdominal development of the tumor showed that an attempt to perform a total extirpation could be obtained only by laparo-hysterectomy; but Professor Vulliet, profiting by the physiological dilatation caused by the gestation, thought his method might be employed after artificial dilatation had been practised. He explained his plan to Dr. W. and myself. It consisted in observing the patient for two days, so as to

eliminate all pre-existing infection; then to tampon the uterus to see how this organ would behave in regard to a "*tamponnement à demeure*" *post-partum*; and lastly, if no fever or intolerance appeared, to perform a resection of the tumor. Without putting aside the accidents which might ensue, Professor Vulliet thought that the dangers would not be greater than those accompanying laparo-hysterectomy. No pyrexia having been found, and the tamponing being perfectly well supported, the operation was performed five days after the abortion. The hand was easily introduced into the uterus, freed from the tampons, and washed out with a solution of sublimate ($\frac{1}{1000}$). Seizing, with the other hand, a button-pointed bistoury, with a hidden blade, it was slipped along the fingers of the other hand into the cavity of the uterus; a long and deep incision could then be easily made. The hæmorrhage was of no importance; in consequence the cavity was again plugged at once, and the tampons were changed every second day.

The sixth day after the incision Vulliet was again suddenly called to see the patient, who was again in labor. By touch, he discovered a round, flat disc in the vagina, which had been spontaneously expelled from the uterus; he then felt the remaining tumor projecting into the cavity through the gaping of the incision. I administered the ether, and Vulliet proceeded to the extirpation of the intra-uterine portion of the tumor. The cavity was again washed out with sublimate, and completely plugged with iodoform tampons. At three

different times, at intervals of six and five days, the patient had expulsive pains, and, with each, pieces were expelled from the incision; they were immediately removed by traction and by section. March 23, the patient was completely delivered of this tumor, which she had carried for twelve years. The uterus was large on account of the modifications in its structure, caused by the tumor as well as by gestation. Two months later the patient possessed a normal uterus, fit for conception and gestation. We have often seen her since, and she was never better in her life.

CASE VII.—Mrs. S. B., aged forty-six, married, a confinement in 1871, has had menstruation three times at the commencement of gestation, an abortion at six weeks in 1881. She dates her trouble from 1879. At this time she experienced a malaise in the entire uterus, and had vomiting as if pregnant. Menstruation was before this irregular, became, during the last seven years, so abundant that it stops only for a few days; constant dysmenorrhœa, severe pains in the kidneys and abdomen, troubles in micturition, yellowish-white discharge. In 1884 Mrs. B. came to Geneva to consult Dr. D. Professor Vulliet, who was by chance at this gentleman's house, removed a polypus, as large as a small mandarin orange, from below the inferior segment of the uterus and lodged in the vagina. This operation relieved the patient, but soon after bloody discharges appeared again. She was then advised to leave off her occupations, and was put under treatment by ergotin. During the winter

the discharge was considerably diminished and the suffering less, but all commenced again in the spring, when Mrs. B. began once more to work. She was sent to Professor Vulliet, in January, 1887.

The uterus was as large as at a four month's gestation, but perfectly regular in form. Four *séances* of dilatation by tampons were sufficient to enable us to see five or six centimetres deep into the cavity aided by an intra-uterine speculum. Nothing was seen except an intense inflammation of the mucous membrane. By examination with two fingers and by lowering the organ, tumor was distinctly felt, having the dimensions of an orange. It formed a slight vault in the cavity, but considerably more so in the abdomen, in the region of the right horn. Incision two and one-half centimetres deep abundant hæmorrhage, but lasting a short time. The finger, inserted immediately into the incision, felt a tissue which could deceive nobody; it was the fibroma itself that had been cut. Irrigation with corrosive sublimate; tamponing; ergotin; electricity. After the second day labor pains announced the expulsion; the third day intra-uterine examination having shown fibrous masses in the uterus, the patient was put under ether. These masses were seized and excised with scissors; about forty or fifty grammes of tissue were removed. Some *débris* existed in the gap of the opening. Continuation of tamponing and treatment.

Labor again began in three days. The patient is etherised. By touch, the remains are found for

ing a hard tumor very intimately united with the uterine wall. Vulliet, with a pair of strong forceps, armed on the inside of their blades with sharp points, seized the fibrous masses and by a movement of rotation was able easily to enucleate them; he removed this time fifty to sixty grammes of fibrous tissue. Intra-uterine touch, combined with abdominal palpation, showed that the uterus was completely freed of all new growth. This patient was a woman who had already had a fibroma removed; it was consequently just to suppose that there still might exist others, but the uterine walls were of normal consistence and everywhere homogeneous, so that nothing appeared suspicious. It is probable that, when several fibrous nuclei exist, the great development of one prevents development of the others; but if spontaneous elimination or an ablation takes place, thus removing the tumor, the others may grow and produce the same train of symptoms. Vulliet considered this fibro-myoma as intra-parietal, having two poles—one sub-mucous, the other sub-serous. The muscular tissue must have been very thin, but had not lost its contractility; spontaneous elimination was a proof of this fact. January 23, we saw the patient, who was exceedingly well; menstruation was normal, a fact which, the patient said, had never before occurred in her previous life.

CASE VIII.—Mrs. L. M., aged fifty, married; six normal deliveries, one abortion with good termination. Very abundant menstruation, regular until November 3, 1887. Very little

whites. For about three years has had pains in the kidneys, feeling of weight in abdomen, troubles of the bladder and rectum. November 3, 1887, patient was suddenly taken with hæmorrhage when getting up. Since then, has had bloody discharge, which stops only for a short time; the commencement of each hæmorrhage is announced by pains in the abdomen. Dr. B., having recognized the presence of a uterine tumor, called Professor Vulliet in consultation on April 5. An operation was decided on, and the patient entered Professor Vulliet's private clinic on April 8. General condition—tall, well built, thin, with marked anæmia; patient states that she weighed ninety-seven kilos. in October, 1887; she has sensibly diminished in weight. April 9, Vulliet had the first *séance* of dilatation by tampons, a second was made the 10th, a third the 11th. On the next day, the uterus was open enough to allow of the introduction of four fingers into the cavity of the organ. Local condition—by abdominal palpation a fibrous tumor is felt, encased in the anterior wall; it projects into both abdominal and uterine cavities, especially at its inferior part; the posterior wall of the uterus is thin. Diagnosis—fibrous tumor of the uterus.

The operation took place April 12. Vulliet commenced by withdrawing about thirty tampons from the uterine cavity; an irrigation of five litres of corrosive sublimate ($\frac{1}{1000}$) was then made; the vulva was held apart, and the uterus was drawn down; a "boutonnière" was then made with scissors in the uterine

mucous membrane; it was then opened up six to seven centimetres, and the neoplasm was thus brought into view. The finger was then introduced so as to perform enucleation, which was remarkably easy on the entire periphery. As the uterus was hard to draw down, the finger could not reach the upper limits of the tumor to accomplish the enucleation, so it was decided to amputate with scissors as high up as possible, when the cavity, resulting from this operation, could be stuffed with tampons. This amputation was difficult, and brought away the lower part of the tumor weighing about two hundred grammes. The two following days the tampons were renewed after irrigation. On the third day there was a slight rise in the temperature, and it was feared that the remaining portion had been infected, so Vulliet removed from the surface about fifty-grammes of tissue which presented no signs of decomposition. On the eighth day after the operation, having noticed that the tumor had considerably descended, Vulliet decided to end the extirpation, which, thanks to the spontaneous enucleation produced since the last *séance*, was very easy, for the finger reached the superior limits. This portion weighed two hundred and seventy grammes. Mrs. M. was well at the end of eight days without accidents.

We have here another example of a tumor for which, on account of its size and situation, laparotomy was indicated, and which was extirpated by the natural passages without mutilating the uterus.

Third series: Cases of resection

followed by neither enucleation nor forced enucleation.

CASE IX.—In August, 1884, Vulliet operated at the Maternity on a fourth case. Mrs. G., aged fifty-three, complained for ten years of abundant loss of blood every two weeks. Has always had anæmia, is feeble, and the gravity of her condition justified energetic intervention. He examined by intra-uterine touch and discovered an interstitial fibroma situated in the posterior wall; the maximum of development was a little to the right of the median line. He made an incision the entire length of the uterine wall about a centimetre deep; on complication. The patient remained in bed two weeks and then left for the country. Two weeks later she returned to the Maternity. Vulliet did not see her, and it was Dr. Fontanel, the assistant of the *service*, that received her. It was learned from him that no hæmorrhage appeared, and that the patient felt and appeared better. Since that she has not come to the Maternity, feeling probably too well to come for her own interest. In February, 1887, we looked her up. Mrs. G. was perfectly well; she attends to her occupations as schoolmistress. Her uterus is double the normal size. Vulliet believes that there exists another fibrous tumor which keeps it thus enlarged; but this tumor is probably sub-serous, and gives rise to no symptoms.

CASE X.—Mrs. M. D., aged forty-six; three confinements, one abortion, which kept her in bed six months; she cannot tell what the complication was; no heredity in the family;

domestic troubles. Menstruation regular until 1893. Since this date, discharge more frequent and very abundant, every two or three weeks lasting eight to ten days. Subjective symptoms: feeling of weight and discomfort in abdomen and kidneys; pains sometimes sharp. In 1884 the discharges of blood became more abundant; to the metrorrhagia are added white and yellow discharges; micturition frequent; enlargement of abdomen. She underwent different treatments, principally cauterization of the cervix. Professor Vulliet was consulted on August 24, 1886.

General condition: Uterine facies, thin, projecting abdomen, digestive trouble, anæmia. Local condition; Abdominal tumor situated in the middle, as large as a six months' and a half uterus, hard and resisting; enormous cervix, its entire left lateral segment is considerable. The external orifice assumes a semi-circular shape, and is pushed to the left, on account of the projecting tumor; it admits two fingers, which penetrate easily to a distance of two or three centimetres. All movements given to the cervix are reproduced by the tumor. The cavity measures eighteen centimetres. By the introduction of large sounds, drawing the organ down and bimanual exploration, the tumor is found to be interstitial, situated in the right lateral wall. Vulliet was struck by one peculiarity; this was the softness of the tumor. He commenced at once the dilatation of the cavity with iodoform tampons. After three or four *séances*, ten centimetres into the cavity could be seen by means of an intra-uterine speculum.

Intra-uterine touch gave the exact relation of the new growth to the walls. It was a large tumor, entirely abdominal. The uterus had kept its shape, notwithstanding that the right horn was evidently more developed than the left. As high up as could be felt, the left wall was thinned. There was no projection into the cavity. Vulliet made a longitudinal incision, in order to loosen the internal layer, at three different times, allowing a repose of two weeks between each *séance*. At the same time, he ordered faradization and ergotin, so as to push the neoplasm to the side weakened by the incision. The last incision was made about the middle of October. A watery running was produced. Some weeks after, the fibroma had gradually diminished. The difference in volume was more marked in the bilateral and antero-posterior diameters. The discharges stopped, the patient became gay, strong, and active. The abdomen had its normal dimensions. The incisions had not been followed by spontaneous enucleation, but they had caused, with the aid of electricity, an absorption and a remarkable hæmostatic effect.

This continued for three months, when suddenly, about the beginning of January, without any known cause, during the absence of Professor Vulliet, the patient was taken by a series of *malaises*. The abdomen became large and painful on pressure; no vomiting, cephalalgia, or fever. Upon his return, Vulliet found the symptoms very different from those in August; the abdomen had become greatly swollen. The tumor reached

above the umbilicus. By abdominal palpation, fluctuation was felt in certain parts of the neoplasm. Little by little the inflammatory symptoms subsided, but the tumefaction remained. The diagnosis was undecided. Was it an œdema of the fibroma and the formation of a cyst? Finding a spot where the fluctuation appeared pronounced, an exploratory puncture was made; this gave no result. But the fluctuation becoming more evident and more extensive, a second puncture was made fifteen days later; it gave issue to four litres of non-sticky, grayish-yellow pus. Following this second puncture the patient had a few days of relief and repose, but the liquid soon reappeared. Towards the end of February the fluctuation was again evident in the entire tumor, and signs of absorption showed themselves in a slight pneumonia, probably septic. In presence of these alarming symptoms the urgency of an intervention was felt. But what intervention? Laparotomy with total hysterectomy could not be thought of, for, on one hand, the patient was very feeble, and could not stand the shock; on the other hand, the tumor was too large, too diffused, and its adhesions were probably too numerous for one to count on a radical operation with any chance of success. Professor Vulliet decided to make an exploratory incision, and, on account of the circumstances, to fix the walls of the cyst to the lips of the abdominal wound; to empty and scrape the cavities after having destroyed the partitions dividing them, and so try to procure a fixation of the fluid tumor by a consecutive drainage.

The patient was etherized on Feb. 28, 1887. Having made an incision through all the abdominal tissue, ten centimetres in length, Vulliet reached the uterus, fastened it by sutures to the lips of the abdominal wound; then an incision was made in the uterine wall, from which twelve litres of nasty pus was withdrawn. The cavity was washed with a solution of corrosive sublimate ($\frac{1}{1000}$), and a drainage-tube, of one and a half centimetres in diameter and fifteen centimetres in length, was introduced. Every day the cavity was washed with an antiseptic solution. As the cavity diminished in size a smaller and shorter drainage-tube was inserted and a larger one removed. The patient got well with astonishing rapidity. After the month of May she resumed her occupation. At this time she experienced no discomfort, and all physiological functions were normal. The abdominal portion of the tumor is only noticed in the part where it is fixed to the wall; the cervical portion is considerably atrophied. Mrs. D. may be considered as cured; she is forty-seven; the menopause will soon render a new growth of fibromata improbable. The history may thus be summed up:—

- 1st. A fibroma, probably œdematous from the commencement.
- 2nd. Œdema is reduced under the influence of the incisions, ergotin, and electricity.
- 3rd. Reappearance of œdema when the incisions were cicatrised.
- 4th. Formation of a cyst in the tumor.
- 5th. Puncture leading to suppuration of the cyst.

I have quoted this case, even though the intervention did not cause

expulsion of the tumor by the natural passages. I think it proves that œdema and cystic degeneration tend to produce conditions in which one cannot count on spontaneous expulsive efforts, which are absolutely necessary after incision. But, I believe that, even in a similar case, Vulliet's operation by the natural passages and by the interior of the dilated cavity, may prove of great service. This patient was relieved of a tumor to the same extent as if a sub-vaginal amputation of the uterus with fixation of the stump in the wound had been performed. It matters little whether the uterus be fixed by the edges of an incision made into the wall, or by the surface of amputation, if the remaining uterine mass cause neither trouble nor pain and its volume is insignificant; besides, the dangers were not as considerable as if laparo-hysterectomy had been performed. It may be advanced that we produced infection by the incisions and by punctures. In reply I would say that the uterus was already the seat of an ichorrhœa and that the infection could have been produced as well by the traumatism of laparotomy as by the operations we performed.

Fourth series, where there was only dilatation without incision.

CASE XI.—Mrs. L. R., aged forty-six, married; three normal deliveries, one abortion; menstruation regular until 1885, when the discharges became so abundant that there was an interval of only two or three days between them; dysmenorrhœa intense; hæmorrhagia commenced ordinarily by vomiting.

February 17, 1887.—Professor Vulliet was called into consultation by Dr. R. Mrs. R. was in a very grave condition. During the day she had had an attack of uræmia, as well as the vomiting characteristic of intestinal obstruction; much albumen in the urine. Upon examination Vulliet confirmed Dr. R.'s diagnosis. These troubles were due to compression by a tumor completely obstructing the pelvis, pressing the rectum and bladder against the bones. The fingers could not be introduced behind the symphysis to find the cervix, which was pushed high upwards. Tympanites did not permit of abdominal palpation, so that, in short, it was a case where an exploration could not be obtained, and which demanded an urgent intervention. The uselessness of the efforts at reduction led to the conclusion that the mass was fixed by adhesions. Nevertheless, it was decided to try vaginal and rectal irrigations and cold applications to the abdomen.

When the patient was better she entered Professor Vulliet's private clinic. The tumefaction had not diminished much, and to save the life of the patient an operation was necessary, which presented itself under very bad conditions. The patient was etherized, Vulliet not wishing to operate without trying reduction. He was about to give up, when it seemed to him as if the tumor was slightly displaced. He commenced again, and suddenly the fundus uteri swung above the promontory, and at the same time the cervix came into place. The tumor reduced reached to the umbilicus.

This reduction changed the physiognomy of the case. Extirpation by laparotomy might have been tried, which presented no special difficulties, but Vulliet preferred to have recourse to dilatation. When the uterus was largely dilated he could find nowhere a circumscribed tumor. The entire organ was hypertrophied; the walls were uniformly thick. It was probably the kind of new growth described by Virchow as general hyperplasia of the uterine fibro-muscular tissue. A Hodge's pessary was introduced to prevent another retroversion. This woman is at present well. The uterus has considerably diminished in volume.

In this case if reduction had not been accomplished, it would have been necessary to perform sub-vaginal amputation of the uterus, while, when once reduction was accomplished, the case became entirely different; the urgency of operating disappeared, and tamponing availed to bring about a considerable diminution of the hyperplasia and its symptoms. Dilatation in a like case replaces an operation which gives many chances for a fatal ending.

CASE XII.—Mrs. A. H., aged thirty-three, married, multipara, anæmia for several years. In 1882 she received bad treatment from her husband—kicks, etc. Since then she experiences continual contractions in the abdomen, constipation, frequent nausea. Menstruation always regular. Since 1883 she has had watery discharges and whites. She came to the Policlinic in September, 1887. She had not consulted a doctor. General condition: Well built; anæmic; ab-

dominal facies. Local condition: Projecting abdomen; voluminous uterus, extending four fingers' breadth above the umbilicus, situated rather to the left; cervix normal, closed; anterior *cul-de-sac* relatively free. In the posterior *cul-de-sac* is felt a round body, with an even surface, smooth and voluminous. Sound enters fifteen centimetres deep. Dilatation with laminaria and prepared sponges, combined with iodoform tampons; these were well supported. In six days two fingers could be introduced into the uterus just above the internal orifice. At this point the anterior wall appeared quite free. In the posterior wall is felt a convex tumor, hard and fibrous, commencing just above the internal orifice. As I was alone I could not bring down the organ; and as the cavity was very deep (fifteen centimetres) for exploring with only two fingers, I continued the dilatation by introducing eleven iodoform tampons, each as large as a walnut. Vulliet being obliged to leave for a certain time, and not wishing to undertake the case, I stopped the dilatation for the time being. The patient returned in November. At the examination I was astonished at the diminution of the tumor—the uterus had fallen three fingers breadth below the umbilicus. Thinking that this happy result might be due to the intra-uterine iodoform tamponing, I recommenced the dilatation.

November 9.—Laminaria.

November 10.—10 iodoform tampons in the cavity, and prepared sponge.

November 11.—15 iodoform tampons and large prepared sponge.

November 12.—19 large iodoform tampons without sponge.

November 13.—3 laminaria, separated by tampons.

Before each *séance* of tamponing, intra-uterine irrigation with corrosive sublimate solution. At the end of five days the dilatation was at the same point as when I left off the first time. Having kept this degree of dilatation for four weeks I left the patient at rest, and commenced again about the 15th January. At each dilatation the uterus was notably reduced in size. It augments, it is true, in volume at the time of menstruation, but afterwards it comes back to the proportions it had before. In spite of these relapses a regular reduction in volume was obtained, and the greater part of the discomforts as well. Mrs. H. can continue her daily occupations.

I have mentioned this case although there was no surgical intervention to extirpate the new growth; it supports certain ætiological considerations as to fibro-myomata that I mentioned in the commencement of this memoir. This is not the only one; in the greater number of cases that underwent tamponing, the volume of the new growths diminished very much. The fibromatous tumor seems to be a kind of goître of the uterus on which iodoform appears to act in the same way as in cervical goître.

CASE XIII. — Mrs. P., aged forty-two, pluripara, consulted Professor Vulliet in July, 1885, for a large fibroma which had reached the level of the umbilicus some time previously. She lost blood in abundance during and between her periods. The pro-

fessor performed dilatation; the hæmorrhages stopped. In August and September the menstruations were normal. In October the hæmorrhages appeared again, and in December she came and begged to be operated upon; being poor, she could not be detained at home by her sickness.

Vulliet reports its further progress as follows: "Having already performed dilatation, I had been able to foresee that it would be very easy to obtain, in a short time, a large dilatation of the uterus. This consideration, as well as the splendid results that enucleation had given me, encouraged me to have recourse to this method. I regretted, as will be seen later on, having changed the rules which had guided me before—rules, in accordance with which, I had applied my operation only in the case of small or medium-sized myomata. In this case I tried to operate in a space measuring 18 centimetres, and on a uterus reaching to the umbilicus.

On November 8th I commenced dilatation; on the 12th it was so complete that I could introduce four fingers into the uterus. By bimanual palpation I could distinctly feel a fibroma as large as a child's head, situated at the fundus of the uterus in the superior and posterior walls. Being absolutely interstitial, it caused no projection in either the interior or exterior of the organ. I cut down on it, making a long incision into the capsule; this incision was not deep; no complication. Two days later the patient entered into labor which lasted two hours and then stopped. The next day I intro-

duced my finger into the uterus I felt a little mass of fibro-myomata forming a hernia into the half-opened inferior part of the incision. I introduced new tampons, hoping to produce a spontaneous delivery. Labor commenced again during the day, but was feeble. On the next day things were the same. The woman having lost blood during two years was very weak. On the evening of the 16th of November there was a slight elevation of the temperature. On the morning of the 17th, the fever having increased, and the patient's expression presenting a certain degree of alteration, I foresaw the danger. Introducing the entire hand into the uterus, I made fruitless efforts to seize the new growth, and succeeded in drawing down only insignificant fragments. Placing the patient in the genu pectoral position, with the aid of my intra-uterine speculum I could see that part of the new growth which formed the hernia in the incision, but could get no further. My inability to extract or enucleate the growth resulted from the fact that the field of operation was situated too high up. I could not reach it either by downward traction or by pressure from above. I was certain that I could easily operate on the entire neoplasm if it were only three or four centimetres lower down, for I had every facility for manœuvres in the breadth of the cavity. I proposed abdominal hysterectomy, but the patient having had shooting pains, absolutely refused to submit to the operation, hoping that the affair might terminate by delivery. She died in the night of the 17th.

I will not argue the point that hysterectomy would not have probably given another result, for the patient, bloodless and worn out, presented the most unfavorable conditions for a laparotomy. I restrict myself to the statement that the only fatal case occurring after the application of my method is just this one, where I transgressed the limits that I had proposed before my first publication, and I draw from this case this conclusion—that enucleation must not be attempted when the fibroma is situated too high for one to force its extraction at the first sign of infection.”

CASE XIV.—Miss R., of Lyons, aged sixty-five, virgin, menstruated at twelve years; health excellent up to the age of forty-five. She then noticed that she was getting stout; she performed palpation on herself, and felt some hard and movable masses in her abdomen which protruded on each side of the linea alba, and reached, she said at this time a hand's breadth above the pubes. Having no pain, she did not consult a doctor. At the age of fifty-two she was suddenly and without any appreciable reason attacked with peritonitis, which appears to have been severe. She was already convalescing from this peritonitis when she was attacked by an acute affection of the chest, which put her life in danger. This complication is important. I take note of this pleurisy or pneumonia, for it seems to have given rise to embolism, as will be seen later on. Miss R. was in bed 63 days; she never recovered her former health; her menstruation, which had been normal

until the peritonitis, never once appeared again. As she suffered from her abdomen, she was sent by her doctor to Lyons. The specialist consulted, diagnosed a fibroid tumor and advised subcutaneous injections of ergotin. This treatment produced no improvement, but the patient, although gradually becoming more feeble, did not try any other. She came to Geneva, August 6, 1888, to consult Professor Vulliet.

The examination showed the following: a pale, nervous woman, with cachetic aspect; she walked with difficulty on account of pains and abdominal weight; she lost a clear, transparent, yellow liquid in great quantity. Abdominal palpation and vaginal touch revealed a median tumor, embossed, of irregular consistence, feeling in certain parts as hard as stone and, wherever the finger pressed, arterial pulsation could be felt; it reached the umbilicus, the fundus uteri formed a ball as large as an orange and extended on both sides in the form of horns; the horns came within about three centimetres of the superior anterior iliac spines, and both ended in a swelling as hard as bone; the tumor was slightly movable, causing the posterior cul-de-sac to move with it. It was impossible to introduce a small whalebone sound more than two centimetres; this caused a severe hæmorrhage.

The patient entered Professor Vulliet's clinic, and dilatation was practised. This was extremely difficult and abortious, and was performed very slowly. In the first phase (six days) only a progressive catheterism with soft sounds was performed. In the

second phase sticks of laminaria were twice introduced. In the third phase dilatation was produced only by tampons. At the end of fifteen days the cavity was widely open and admitted a finger and blunt curettes, as well as irrigation cannulas of large dimensions. There was no fever and the patient felt better, as if the dilatation alone had produced relief. *Examination by intra-uterine touch:* The patient having been anæsthetized, the professor introduced his finger into the uterus; it entered with ease, but, as the tumor did not descend either by pressure from above or by traction by forceps, there was no means of penetrating more than five or six centimetres into the cavity, which measured twelve centimetres in depth; as far as the internal orifice the consistence of the uterine walls was normal and supple, but from this point the finger felt as if it penetrated into a box of bone or stone, so great was the rigidity of the walls; the organ could not be bent or moved in any direction—it was perfectly rigid; in front and in the back only was there a certain suppleness. The dilatation was obtained only by means of these two zones; the rest did not seem susceptible of expansion. The entire anterior face of the walls of the parts accessible to the finger were covered by voluminous buds. A curette being introduced brought out about 100 grammes of buds, mixed with friable pieces, which appeared like degenerated fibroid tissue. Vulliet was about to stop the scraping, which did not bring anything else away, when he felt the instrument touch a hard surface, which

gave the same sensation as a vesical calculus might give when touched by a metallic sound. It was impossible to withdraw the smallest piece capable of showing the nature of this hard body. The uterus was well irrigated, and then tampons were introduced. Forty-eight hours after, attempts were again made, which withdrew a small quantity of a crushed and shapeless calculus. A microscopical examination was made, and it was found that there was a new growth, composed of fibroid tissue, having undergone calculous degeneration, and complicated with an endometritis.

It is useless to describe in detail the numerous remedial measures adopted to combat this disease. During six weeks this patient was placed on the operating table every second day, and, by means of the curette and forceps serving as lithotrites, we extracted more than 250 grammes of *real stone*. Sometimes this was only *débris*, in the form of grit; sometimes irregular pieces, of which the largest was as big as an almond, were extracted. Some seemed to have been broken by the operation, while others produced the impression of an independent nucleus, offering the shape of little shells, and retaining on their surface certain imprints—due probably to the moulding in some recesses of the shell; several must have been encased in the wall. As these foreign bodies were removed the uterus became smaller; at the end of a month it did not reach above the symphysis. The region of the horns was then attacked. Their extraction was

executed in the same manner as for a calculus in a canal. The first extracted were from one to two centimetres in diameter; the others, as they approached the more external parts of the horns, were smaller. I collected all the *débris*, and gave it to Professor Zahn. At the end of six weeks' treatment the uterus was in its normal condition; the consistence everywhere the same. Neither the sound nor bimanual examination revealed the existence of a foreign body. In spite of this long series of operations the patient gained her strength and flesh, and these multiple extractions had caused only slight sufferings compared with those occasioned by any uterine dressing, even in a most tolerant uterus.

If we take into consideration the facts established by this case, we find—1st, general augmentation in the volume of the uterus; 2nd, an infiltration or a calculous deposit in the interior of the walls of the organ; 3rd, fibroid tissue in abundance. These facts, as well as a microscopical examination, lead us to diagnose multiple interstitial fibroma or fibroid infiltration, having undergone calculous degeneration. Scraping opens the capsule, and by the opening thus practised the extraction of the calculus deposit is mechanical. A wide and permanent dilatation by tampons can alone permit such an operative procedure, otherwise abdominal hysterectomy would have been resorted to, and this presented itself in very bad conditions. This patient, who had recovered her health entirely, died six weeks after her recovery in a most sudden manner; she pre-

sented no abdominal symptoms and no swelling of the legs. The family would not consent to an autopsy, so that nothing could be learned as to the nature of the cause of death.

CASE XV.—M. T., from Nice, aged forty-four. Menstruated at thirteen years, the menses being always abundant, regular and without pain; duration three days. Had her first child in 1869; breech presentation, with normal post-puerperal stage. In 1879, miscarriage at seven months, foetus dead; recovered without any complication. In 1888, miscarriage at three months; recovery uncomplicated. Infectious troubles of the genital organs. For the last three years the patient has felt tired, had pains in the back, obstinate constipation. For two years the menses have been very abundant, lasting eight days; between the menstrual periods, leucorrhœa is excessive, being sometimes tinged with blood. Quite severe and repeated uterine colics occur.

Examination showed a crest-shaped tumor situated on the cervix; the Nabothian glands are increased in volume. The uterus is the size of a three month's gestation, in normal position and movable; the adnexa appear to be normal. Operation on March 9, 1893. Excision with scissors of the small tumor on the cervix and another situated on the cervical canal, in order to determine microscopically their nature, which proved to be benign. March 9, uterus packed with iodoform gauze; March 10, a laminaria was introduced. After dilatation, a fibrous polypus was found in the uterine cavity about the size of a large pigeon egg.

March 11, etherization; bilateral incision of the external orifice. Two fingers were introduced into the cavity and about two-thirds of the polypus were removed by morcellation, as it was found that the growth could not be removed entirely from its bed. The uterine cavity and vagina were packed with iodoform gauze. Suture of right incision of cervix, which bled freely. Slight expulsive pains were noticed by the patient. The after results were long. A foetid discharge appeared, lasting for two weeks, necessitating daily intra-uterine irrigations of a carbolic acid solution and iodoform gauze dressings. Little by little all symptoms subsided. The uterus came back to its normal size and the patient, who was much debilitated, regained her health and strength, leaving the clinic in excellent condition.

En résumé, I would say that Prof. Vulliet's method is indicated wherever there exists a marked disproportion between the depth of the uterine cavity and the greatest diameters of the tumor; by it a radical cure of fibromata can be brought about, when there is a layer of contractile tissue on the peripheral side and when the growth is not undergoing degeneration, altering its consistence; that when conducted under all antiseptic precautions it is without danger; it is conservative surgery, as it does not necessitate hysterectomy; the dilatation of the uterus exercises a marked hæmostatic action; and, lastly, iodoform tampons appear, as local applications, to cause a permanent reduction in the size of the growth.

826 Beacon St., Boston.

The Treatment of Catarrhal Salpingitis by Electricity.*

DR. KAPLAN-LAPINA.

I DESIRE to relate to this Society four cases of uterine disease, accompanied by lesions of the adnexa, in which electro-therapeutics sufficed to bring about a complete and definitive recovery.

CASE I.—Mrs. C., aged 25, works on a farm. Menses at the age of 14, every month, lasting from three to four days, moderate in quantity and without pain. Married at nineteen; has had two children, the last one five years ago. The present disease dates back from her first labor, and was made worse by her second. I saw the patient for the first time in September, 1892. Before this, she had been to the Charité Hospital, where Dr. Walter advised repeated curetting, and if this did not succeed to perform a laparotomy. She had very sharp pains, weight and fullness in the pelvis, especially on the right side.

Symptoms.—Very abundant leucorrhœa; the menses are perfectly regular, slightly abundant and last two or three days. Digestion poor, anorexia, coated tongue, impossibility to work, walking painful, sometimes even impossible, on account of the pain. The patient is small, thin and *very nervous*. On examination I found an enlarged uterus, hard, thick, in anteversion and very painful on pressure. The right tube is very much hypertrophied, very painful; the corresponding ovary is notably increased in size. The left tube is

less hypertrophied and sensitive, its ovary is normal. By the speculum, the cervix is found to be hypertrophied, congested, of a blueish color; a small erosion exists around the external orifice. Examination of this patient was most easy and allowed of a complete idea as to the condition of the adnexa.

Treatment.—I treated the patient from Nov. 30, 1892, to March 15, 1893. Seventeen applications were made during the three months and a half, consisting of positive chemical galvano-caustic of five minutes duration, and from twenty to ninety milliamperes. The patient rested for one hour after each application.

She was never put on any other treatment and never missed a day at her work, at least as much as her health would allow. In March no apparent lesions could be made out and Dr. Apostoli saw the case at this time and saw for himself the integrity of the genital organs. I should add that the patient became pregnant in August, 1893, five months after the end of treatment. She was delivered six months ago, nursed her child and feels well. I saw her again on October 10, 1894, and found that she still continues to feel in excellent health.

CASE II.—Mrs. L., aged 43; works on a farm; eight pregnancies, the last one, eight years ago, was very difficult; shoulder presentation; has been sick since this last labor.

Diagnosis.—Fugous endometritis; complete laceration of the left side of

*Read before the Société Française d'Electrothérapie at the October Meeting and translated in *extenso* from the Bulletin of the Society.

the cervix, forming a very painful cicatrix in the left cul-de-sac, with retraction of the cul-de-sac, and a doughiness around the cicatrix. Very marked right sided salpingitis; the adnex on the left could not be reached on account of the cicatrix.

Symptoms.—Persistent menorrhagia, leucorrhœa, severe pains, even when in bed, poor digestion, anorexia, sleeplessness, impossibility of work.

Treatment.—This was commenced February 15, 1893, and ended May 21 of the same year. During the three months I made eighteen applications, of five minutes duration, with the positive chemical galvano caustic, of from forty to one hundred milliamperes. The patient became pregnant in November, 1893, ending in the birth of a fine child at term. The patient has been well since.

CASE III.—Mrs. L. aged 27; has had four children, the last one four years ago; the patient's trouble dates back from the last pregnancy.

Diagnosis.—Metritis, endometritis with double salpingitis, worse on the right side.

Symptoms.—Continual pains in the pelvis, especially before the menses, leucorrhœa, general weakness, walking difficult, working almost impossible. Treatment was commenced on March 15 and applied for the last time on June 14th, as at that time all pain had disappeared. There were fifteen applications in all, of five minutes duration and varying from 30 to 60 milliamperes. A close examination showed that the genital organs were normal. This woman has had a child two months ago at term and continues to feel well.

CASE IV.—Mrs. S., aged 39, housewife. Menses at the age of 14, regular every month but very painful. Married at twenty, had her first child at twenty-one. This first pregnancy was followed by three miscarriages, then by two normal pregnancies. The patient says, however, that she suffered ever since her first confinement, which ended by the application of the forceps, and obliged her to remain four weeks in bed.

Examination of the patient on December 12, 1892, showed a complete laceration of the perineum with a slight prolapsus of the anterior vaginal wall; the uterus is low down, increased in size, hard and retroverted. The tubes are slightly hypertrophied but not very tender.

Symptoms.—The patient complains of dragging pains and especially of weight in the pelvis. These local symptoms are accompanied by palpitations, flushes of heat and difficulty in walking. Menses are only slight in amount. Treatment consisted in the application of chemical galvano-caustic, sometimes positive, at others negative; intensity of the positive from 40 to 80 milliamperes, the negative never over 40 milliamperes. Duration of treatment four months, from January 4th to May 3, 1893. Total number of applications thirteen.

Results.—The uterus was markedly decreased in size; consistency is normal; mobility is greater; the tubes show nothing abnormal; all the organs of generation are devoid of pain. The general condition of the patient confirms our examination; she feels well and the menses are much more profuse. I saw her in September, 1894,

and she tells me that she is in the best of health.

The treatment of each of the above cases might be developed at greater length, by giving the details of each application and how they supported them. But I only wished to expose the really important part of the history of my patients, that is to say, the diagnosis and the condition of the organs at the end of the treatment.

Three out of four of these patients became pregnant, and one of them was a woman of 43 years. In no one of them were the lesions of the adnexa in any way doubtful, lesions of long standing and well marked. All four were not improved, but actually cured, since Case IV., which is the latest, dates back now sixteen months and I have never lost sight of any of them since their treatment ended.

Albuminuria in Pregnancy.

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THERE is no question in the minds of the leading obstetricians of this and other countries that albuminuria, as a complication of pregnancy, is of serious import, both during the time of gestation and of delivery. It must, however, be admitted that as far as its being a factor in the causation of many important puerperal diseases, it is still imperfectly understood. That albuminuria in every pregnant woman is necessarily attended with serious kidney lesion does not follow, for I believe that in at least ten to twenty per cent. of cases of pregnancy an examination of the urine will show albumen in greater or less quantities, and in the vast majority of these this pathological condition will be unattended with any serious trouble.

In many of these cases it disap-

pears entirely after delivery, showing that its presence must have been due to some temporary cause, and not as indicating any organic lesion of the kidneys.

That albumen is often met with in pregnant women was first brought to the attention of the medical fraternity by Dr. Rayer, whose researches proved that this alteration in the urinary secretions often affected the health of the mother, seriously endangered the prognosis of delivery, and greatly retarded the regular development of the foetus.

We know that the presence of albumen in the urine ordinarily indicates a serious organic lesion, which nearly always proves fatal and hence, when this symptom occurs during pregnancy, we have every reason to

feel alarmed. The question will naturally arise, is this condition due to the same causes as those found in Bright's disease, or is it simply one of the numerous modifications produced in the female economy during pregnancy?

In the first instance, the trouble is of so serious a nature as to solicit our most anxious interest; in the second, it is generally produced by temporary causes, and in a large majority of cases, being purely functional in origin, will disappear with the causes that produced it. Ordinarily, the mild albuminuria of pregnancy is not accompanied by the many functional disturbances of the body and the varied symptoms associated with grave kidney lesions.

Dropsy, which is almost a constant symptom of Bright's disease, is quite often found wanting in the albuminuria of pregnancy. One eminent authority considers that dropsy, as a symptom of albuminuria in pregnancy, is found wanting in at least forty to fifty per cent. of cases.

Then, again, in by far the greater number of cases, the albuminuria of pregnancy disappears in a very short time after delivery, whereas we have all had painful professional experience of the great obstinacy of albuminous nephritis. In fact, it is difficult to explain the sudden disappearance of this otherwise serious alteration in the urinary secretions, except on the hypothesis that it is functional in origin and simply a modification produced by gestation.

However, on the other hand, we have all seen cases of albuminuria followed by a fatal attack of convul-

sions during labor, in which the kidneys showed decided structural changes, very similar to those found in the various stages of albuminous nephritis. Healthy urine, as a rule, contains no albumen, nor should it be found in the urine of a healthy woman during pregnancy. When we find it, it indicates a pathological condition of which albuminuria is a symptom.

Every functional disorder, whether temporary or permanent presupposes a temporary change in the organ that presides over that function. In looking for the causes of albuminuria in pregnancy, we should not take it for granted that the kidneys alone are at fault in the production of this symptom. The kidneys simply eliminate the albuminous urine, whereas the secretion of urine is both a local and a general function. It is general because it begins everywhere, and it is local because it ends in the kidneys. The function begins in all parts of the body, by the admixture of heterogeneous elements with the blood, and is finished in the kidneys, where elimination takes place, and the blood returns from it in a purified condition. If we take this for granted, it naturally follows that if we consider a pathological condition of the kidneys as the sole cause of the albuminuria, we must overlook very many other causes which may have a corresponding influence.

It is reasonable to suppose that if any structural change in the kidney itself can increase or diminish the quality and the quantity of the urinary excretions, that an alteration of the blood itself, such as a diminu-

tion or increase of its solid or liquid elements, can produce a like change.

Both clinical observation and post-mortem will assist in supporting this statement, for although in many cases of albuminuria in pregnancy we find grave kidney lesions, in a fair percentage of cases such lesions are entirely absent.

Albuminuria is always preceded by an excess of albumen in the blood, and it is stated that the blood of all pregnant women will show an excess of albumen as compared to the normal.

Dr. Gubler regards the super albuminosis of the blood of pregnant women as the main determining cause of albuminuria. He argues that as the mother's blood must furnish all the nutritive principles for the fœtus, and that in a soluble and diffusible form, it must necessarily follow that as albumen is necessary for the proper nourishment of the new being, it must be found in excess in the mother's blood. If this view be correct, it would follow that if there is more albumen in the blood of the mother than is required by the mother and fœtus, albuminuria results. It may also be due to the fact that the mother produces too much or that the fœtus appropriates too little, or, as is occasionally the case, both of the causes may act conjointly and albuminuria results.

Should the children born of an albuminous pregnancy be strong and well developed, the causes of the albuminuria were, no doubt, due to some changes in the maternal economy, but if, on the other hand, they are weak and puny, it would be

equally as just to suppose that their condition was due to their not appropriating sufficient albumen, and hence its excess in the blood of the mother and elimination through the kidneys.

The experience of many leading obstetricians enforces the truth of the statement that very often the children born of albuminous pregnancies are below the medium in weight and development.

Another matter that is worthy of consideration, as far as the etiology is concerned, is increased blood pressure. Experiments have proven that if sufficient water is thrown into the vascular system to increase suddenly the mass of the blood, and thus produce strong vascular tension, albumen will be found in a short time in the urine.

A still more decisive experiment has been made by ligating the emulgent vein. The sudden arrest of the venous circulation is followed by a progressive stagnation in the capillary vessels and albuminuria results. By gradually tightening the ligature so that entire interruption of the venous flow is not obtained for several hours, or even days, the same has been obtained. From the results obtained by these experiments, it would almost necessarily follow that any tumor causing sufficient pressure upon the venal vein, or vena cava inferior, to slow up and obstruct the returning circulation in the kidneys, might be followed by albuminuria.

One very eminent authority (M. Jaccoud) believes that this is the most frequent cause of albuminuria in pregnancy. In the majority of

cases albuminuria does not manifest itself until the latter half of the period of gestation, but at this time the rapidly increasing size of the womb causes pressure not only on the venal circulation, but seriously retards the venous circulation of the liver and spleen, and the great pressure thus produced on the malpighian bodies results in the passage of albumen in the urine.

Thus far we have not paid any special attention to the kidneys as to the influence they may have in the etiology of this disease. Under no circumstances should they be overlooked, but, on the other hand, neither should we consider them the only factor in the causation of albuminuria. The kidneys must undergo some change, for, if they did not, the albumen would remain imprisoned in the blood vessels. In the majority of cases the kidneys become affected with more or less passive congestion, and certain changes in their parenchyma ensue, these changes being necessary to allow the proteine matters to pass through it, and in most cases are transient in character. We can well understand how co-operative influences, such as an injury or the impression produced by cold or some concurrent disease, might increase the congestion into a mild inflammation, and a so-called secondary albuminous nephritis result. On the other hand, there may have been an existing kidney lesion, antecedating the time of conception or occurring during gestation, and thus the kidneys themselves may be the seat of the initial symptoms of the disease.

Under these conditions, the paramount influence at work in the etiology of the disease would be a primary albuminous nephritis. Quite a number of other theories have been advanced in the etiology of the disease, but I think those just mentioned are now most generally accepted by our leading authorities as the prime factor in the causation of the albuminuria of pregnancy. Let me again repeat them:

First: A changed condition of the blood accompanying gestation, resulting in sup-albuminosis.

Second: The growing uterine tumor, producing over-distension of the blood vessels of the kidneys.

Third: An organic lesion of the kidneys, which may be either primary or secondary, resulting in albuminous nephritis.

At this time the question might naturally arise, why do we have such a large number of cases of albuminuria in primiparæ? This, I think, can be satisfactorily explained by the rigid condition of the abdominal walls in first pregnancies, and the greatly increased pressure to which the womb would subject all the viscera back of it. This would also prove a satisfactory explanation of why the albumen disappears so rapidly from the urine after delivery is accomplished, *i. e.*, after the abnormal pressure is removed.

Another subject which needs more attention than can be given to it in this paper, is that in nearly all cases the presence of albumen in the urine is accomplished by a decrease in the normal amount of urea, and in many cases the greater amount of urine

voided, the less, proportionately, is the amount of urea. In this condition of affairs the kidneys are mostly at fault, elimination being imperfectly performed, the urea accumulates in the blood.

Whether the various nervous disorders commonly attending albuminuria in pregnancy are due to uræmia, or uranemia, as it is called by Gubler, will not allow of discussion in this paper, but I think the majority of authorities agree that the urea found in the blood is sufficient to account for all these symptoms. It is almost impossible to state at what time the albuminuria commences, as there are so few cases of pregnancy in which we are consulted about the disorder until some of the more pronounced symptoms manifest themselves. If it were possible to examine daily, or at least several times a week, the urine of all pregnant women in our care, we might arrive at an accurate conclusion as to its time of appearance, but at present our statistics on the subject are rather meagre and not to be relied upon.

The usually accepted opinion is that it does not appear until the latter half of pregnancy, although Bach states that he has seen it at six weeks in a very nervous patient, and Cazeaux has seen it a number of times at three or four months.

In my own experience, out of seventeen cases of albuminuria in pregnancy of which I have kept a record, fourteen appeared after the end of the six months, one just two weeks before the end of gestation, and in two the albumen was present at my first examination

of the urine, at three and four months respectively. The two cases just mentioned were, I think, cases of primary albuminous nephritis, ultimately proving fatal, one at the time of delivery in a severe attack of eclampsia, and the other from the primary disease eight months after delivery. Of the other cases, two had attacks of eclampsia, of which one proved fatal. The other cases recovered without any serious results, with one exception, this patient dying of chronic Bright's disease two years after delivery.

As to the effects of albuminuria on the fœtus, four of the children were still-born — however, not necessarily due to the albuminuria — and three of them were very puny and of feeble development; but this may simply have been a coincidence. I wish to add that in only three of the cases did I have an opportunity of examining the urine prior to the sixth month of gestation, and hence it is reasonable to suppose that in at least a fair percentage of the cases the presence of albumen in the urine might have been detected some weeks earlier.

At times it appears only at the moment of delivery, as the excessive efforts, necessary in parturition, are well calculated to produce congestion of the kidneys. Other cases are reported in which it was first discovered a few days or a week after the termination of labor, in these latter cases the albumen disappearing in a few days.

Various figures are given, but in the majority of cases the albumen disappears with the termination of labor. In others, however, it contin-

ues and gradually passes into chronic and well differentiated Bright's disease. What is the percentage of pregnant women afflicted with albuminuria? Here authorities differ widely. Myer found albumen in the five and four-tenths per cent. of pregnancies. Nineteen and seven-tenths per cent. of all pregnant women had premature labor, but this was increased to twenty-seven and seven-tenths per cent. of those who had albuminuria, and of those having albumen with casts to forty-one and two-tenths per cent. Of 1,138 women whose urine was examined during labor, twenty-five per cent. had albumen, and in nearly one-half of these there were casts.

Dumas considers that from fourteen per cent. to sixteen per cent. of pregnant women are albuminous, while Penard states that of 800 pregnant women in good health who were under his care, the urine was examined in all of them systematically every fifteen days during the last three months of pregnancy, three only had gravidic albuminuria, and all of these were in primipara.

As to the percentage of cases of albuminuria that will be followed by eclampsia, there are very few reliable statistics from which to quote. One authority gives sixteen per cent., another fifty-five per cent., another thirty-three per cent., so, taking any of these figures, it shows a high percentage, especially in those cases of the disease that are well advanced. It is also well to remember that not every attack of eclampsia is preceded by albuminuria, as a few cases have been reported in which repeated ex-

amination of the urine did not show any traces of albumen, and yet eclampsia resulted.

Among the symptoms indicative of albuminuria are anasarca, amaurosis, obstinate headache and vomiting, lumbar pains, pleurodynia, vertigo, paralysis, insomnia, irritability of temper, convulsions, and other ill-defined morbid conditions which are now believed to be due to this disease.

General infiltration is, however, not so uniform an accompaniment of albuminuria as was formerly supposed. If the urine of all pregnant women could be examined, it would be found that many are albuminous without the least evidence of anasarca. Of course this must not be confounded with dropsy of the lower extremities, which is usually produced by mechanical obstruction of the venous circulation. The slightest degree of puffiness or infiltration about the face should at once arouse our suspicion, and a careful examination of the urine should be made. The one thing especially to be dreaded, and, if possible, prevented, is eclampsia.

There is no question that albuminuria is a strong and a leading predisposing cause of eclamptic convulsions, for, as stated before, the cases are extremely rare in which the convulsive attacks have not been preceded by a well-marked albuminuria. The time allowed for this paper, however, will not allow my entering into details as to the theories advanced concerning the etiology of the greatly feared and very fatal complication of pregnancy and labor.

As to the prognosis, the risks attending the albumuria of pregnancy

are by no means slight. One great source of danger which we should constantly bear in mind is that this abnormal condition of the kidneys may become permanent and chronic Bright's disease follow pregnancy.

Goubeyre estimated that forty-five per cent. of primipara who have albuminuria, and who escape the dangers that may result during confinement, will eventually die from some morbid condition directly traceable to the albuminuria. I think this estimate is too great, but we all know the danger is not a trifling one, and, knowing this, to be forewarned is to be forearmed.

The prognosis, as far as the foetus is concerned, is also rather unfavorable. In the milder cases, the prognosis is good, except that the child when born may be rather feebly developed, but in the severer cases, in which the albuminuria manifests itself early and there is considerable anasarca, it is a frequent cause of abortion, of premature labor and of the death of the foetus.

Treatment.—As to the treatment, much could be said, but time will not allow. Hurdly advises diuretics, hydragogue cathartics and tincture ferri chloride as a tonic and diuretic. If there be no improvement, the patient getting worse, labor should be induced.

Tyson strongly advocates the induction of premature labor in all cases where a previous pregnancy has been accompanied by albuminuria, with grave symptoms, and in all primipara in whom there is any manifestation of Bright's disease previous

to pregnancy. Among other means suggested are vapor baths, dry cupping over region of kidneys, a strict anti-nephritic diet, ammonia carbonas, acetate of potassium, Basham's mistura ferri. The patient should be specially warned against exposure to cold or damp weather, as the trouble, however mild in its nature, may, by a partial stoppage of any of the functions of the body, be fanned into a flame that will ultimately prove fatal.

As to the induction of premature labor, I believe it is justified in all cases where the disease, in spite of all treatment, is going from bad to worse, and where, without it, death would be sure to ensue either during gestation or at time of delivery.

The lessons to be learned from a careful study of the disease, aided by every individual experience, is that the existence of albuminuria in pregnancy must constantly be a source of much anxiety to every careful physician, and must induce him to look forward with considerable apprehension to the termination of the case.

Again, I believe the urine of every pregnant woman should be examined at frequent intervals, both during the earlier and later stages of gestation, and, if such examination shows any danger, we should at once endeavor to correct the evil, for at this, the most important epoch in a woman's life, no conscientious physician is entirely fulfilling his mission or doing his whole duty to his patient who does not throw every safeguard in his power around the mothers of the generation yet unborn.

EDITORIAL.

The Antiseptic Action of Iodoform.

A MOST interesting *mémoire* on the manner of interpreting the antiseptic action of iodoform, has been recently published in *les Archives de Médecine Expérimentale* by Dr. Stchegoleff.

It is well known that this substance, which gives us such splendid results in practice, has shown itself quite inferior in experimental work. In 1887, Heyn and Roosing demonstrated that the presence of iodoform on gelatin plates did not prevent the development of the various kinds of micro-organism (*staphylococcus pyogenus aureus*, *pneumococcus*, etc.). These writers also observed that a tampon of iodoform gauze, when introduced in the vagina of a healthy woman, was, when removed, penetrated by micro-organisms. Their experiments were verified by others. There was consequently an unexplainable contradiction between the experiences of surgeons and experimental workers, the former admitting, the latter denying the antiseptic properties of iodoform.

Dr. Stchegoleff, in order to throw some light on the matter, undertook some experiments in Prof. Strauss' laboratory, with the result of explaining the mode of action of the drug. He found that meat-pepton-gelatin bouillon, which is an excellent culture media for the bacillus of tuberculosis, did not favor the development of this organism when iodoform was present in the quantity of five per cent. The

bacilli inoculated in this iodoform bouillon died in forty-eight hours. An emulsion of a virulent culture in a ten per cent. iodoform solution, when injected in guinea pigs, showed that the animals lived longer than the animals which were inoculated with a pure culture. In short, iodoform kills the bacilli of tuberculosis in cultures and only attenuates their virulence when injected simultaneously into the organism.

The action of iodoform on the *staphylococcus aureus* is quite the reverse. Thus this organism grows as well in a medium containing iodoform as in a normal one, but, on the contrary, the inoculation of this organism submitted to the action of iodoform proves it to be quite inoffensive. Cultures grown in a medium in presence of iodoform can be injected at doses of one cubic centimetre to two cubic centimetres without producing any symptoms other than a slight local reaction, while the control animals inoculated with streptococci grown in media without iodoform, presented the formation of abscess or died in a few days from septicæmia according to the degree of virulence of the culture. If the iodoform is mixed with the culture of staphylococci at the time of inoculation, a small local abscess is the only result; the accidents are consequently not entirely suppressed—they are only attenuated. Thus, iodoform does not alter the vitality of the *staphylococcus* in the cul-

ture media and still it modifies its pathological proprieties. How can this apparent contradiction be explained.

Dr. Stchegoleff questioned as to whether iodoform did not act on the toxins secreted by the staphylococcus without acting on the organism itself. He made two series of cultures; the first were normal, the second contained iodoform in the quantity of 10 p. c. At the expiration of one week he filtered them, in order to eliminate all the organisms, and then injected rabbits with the filtered liquid. The culture liquid which contained no iodoform killed the animals in several hours, while the animals inoculated with the liquid containing the drug presented no accidents whatever. Dr. Stchegoleff believes that, under the influence of iodoform, the toxins of the staphylococcus are transformed into non-toxic iodine combinations. It is readily understood from this fact how iodoform, when applied to a wound, prevents suppuration and infection, without killing the pyogenic organisms. The Klebs-Löffler bacillus acts nearly in the same way as the staphylococcus in the presence of iodoform. It grows well on a medium containing iodoform, but its virulence is weakened. The toxins of diphtheria are attenuated and even annihilated by iodoform, provided that the dose is sufficient and can act long enough. This anti-toxic action of iodoform is most remarkable and explains its good effects against organisms which it is incapable of destroying.

The number of Dec. 20, 1894, of *l'Union Médicale*, from which the above report is taken, also mentions an article which appeared in the *Journal of Russian Military Medicine*, by Dr. Saltikoff, entitled "The Influence of Iodoform on Pathological Microbes." According to this writer, iodoform acts in general on the virulence and proliferation of microorganisms, but its action differs with the different kinds of bacteria. Thus this influence is only produced in an evident way at the commencement of a growth of the *fetid opalescent bacillus*; later, this organism grows as well on media containing iodoform as on one without the drug, and nevertheless its virulence on white mice is completely lost.

The streptococcus is only slightly influenced by iodoform. Cultures of charbon bacillus are lessened in growth and its virulence diminished by the drug. The action of iodoform on the staphylococcus aureus is marked, but the virulence of this organism is only slightly decreased. On the various kinds of vibrions, iodoform acts in a varying manner. It prevents the growth of the comma bacillus and Finkler-Prior organism, but acts only slightly on Deneke's bacillus.

It may be said, in a general way, that besides the ordinary proprieties of iodoform, such as diminishing the secretion of wounds, lessening pain, etc., this drug diminishes the proliferation of several kinds of pathological organisms and lessens their virulence.

SOCIETY PROCEEDINGS.

Suffolk District Medical Society, Boston—Section for Obstetrics and Diseases of Women.

JAS. M. JACKSON, M. D., SECRETARY.

REGULAR meeting, Wednesday, November 28, 1894, Dr. G. H. Washburn presiding.

CORRESPONDENCE BETWEEN DR. E. W. CUSHING AND DR. TAIT.*

Mr. President: At a meeting of this Society in 1894, I read a paper on the "Operative Treatment of Uterine Fibroids," which was published in the *Boston Medical and Surgical Journal*, Vol. 130, Number 13. On page 303 of that number occurs the following expression: "In the light of facts recently placed in evidence concerning Tait, his statistics have far less weight with the surgical world than was the case a year or two ago."

This expression was needlessly offensive to the feelings and reputation of Mr. Tait, as all that my argument required, and what was really uppermost in my mind, was to bring out the fact that since many cases had been reported where after removal of the appendages the myoma had continued to grow, so that hysterectomy had to be subsequently performed, the statistics of Mr. Tait showing recovery from the operation of removal of the appendages and arrest of the growth of the tumors for a variable, but rather limited period, had far less weight with the surgical world than formerly, because surgeons could not be sure

that many of these cases might not at some future time require hysterectomy. I therefore desire to amend my paper by striking out the words "concerning Tait," and to express my regret that I should have used this offensive expression.

In order to justify myself before this society, however, for the use of such words, I am compelled to add that at the time of using them I fully believed that they were warranted, having received, not in confidence or under any reserve, reports concerning Mr. Tait, which, if true, would have fully justified me in using them, and from a source which I had every reason to believe to be credible and authoritative. As, in the course of correspondence with Mr. Tait, he has given me *prima facie* evidence that some of these reports were either untrue or not founded on facts "placed, in evidence" in the manner in which I was informed that they had been placed, I have referred Mr. Tait to the person who was responsible for the reports to me. He is an Englishman, occupying a prominent and responsible position in the profession, and is abundantly able to present his side of the question should it be necessary. As personally I have no evidence whatever of any facts derogatory to Mr. Tait, and as I have no desire whatever to do him or anyone else any wrong, I feel that if I have been misinformed concerning him, and on such misinformation I have based remarks offensive and injurious to him, I owe him an apology, which I hereby tender in the presence of this society.

E. W. CUSHING.

*The whole correspondence between Dr. Cushing and Dr. Tait has lately been published in full in the *New York Sun* of February 5, 1895. Only two copies of this correspondence were in existence, one of which was in the possession of Mr. Tait and the other in the hands of the solicitor of Mr. Ernest Hart, who is now in India. One or the other of these parties must be responsible for the publication of this matter in a lay journal.

REMOTE RESULTS OF THE REMOVAL
OF THE UTERUS AND OVARIES.*Discussion.*

Dr. E. W. CUSHING.—In the first place, in regard to the removal of the uterus, which usually carries with it the appendages, it is a very important question. It is a thing which it is well to consider, because it is one of the later developments of surgery which promise a great deal, and it is living down opposition to it. When in 1887 Martin came over and performed the first vaginal hysterectomies for cancer there was intense opposition. Jackson denounced the whole thing in Washington, and there was an opposition that it was a terrible and dangerous operation, and should not be tolerated for cancer even. Certainly that has passed now. When more surgeons began to do it, it was found that it was not dangerous. Martin did the first three cases here in 1887. Soon after I published twenty-one cases with nineteen recoveries, and I have done a large number of vaginal hysterectomies since then for cancer, and two of them died, one of sepsis 11 days after, and one of heart failure and shock within a few hours. Anybody will admit that the remote results of the removal of the uterus are good if it can save a woman from cancer, and about one-half the cases are saved for three or four years, and something less than that saved permanently, yet I know it rather made me shiver when in 1885 Martin proclaimed that a uterus with any cancer should be removed entirely.

Then came the question of removal of the uterus for fibroids, and that again worked its way against opposition. Where the mortality used to be sixty per cent. it is now less than ten per cent., so that the removal of the uterus for myoma is now as well established as removal of the ovaries for ovarian tumor. The increased safety of it and the advantage to

suffering women is forcing surgeons continually to operate in cases where they would not have done it a few years ago, that is, the increasing knowledge of the bad effects of leaving myomas, complications which finally ensue from pressure on the ureters, or on the intestine, from degeneration of one kind or another, from long-continued hæmorrhage, from salpingitis, has brought it about that surgeons are much more ready to remove the uterus now than a few years ago. And some are going so far as to say — although it makes the conservatives rather hesitate — that they will remove a fibroid the size of the fist to guard against future growth and accidents.

Now, however, by the development of surgery, it is found that by vaginal hysterectomy a small fibroid can be removed with ease and with practically complete safety. If we can with practically complete safety remove the little fibroids, presently there will not be any big fibroids, just as there ought not to be any big ovarian tumors in civilized communities. Here is a fibroid I removed the other day. There was a prolapse and fibroid. The fibroid could not be delivered whole, but by pulling it down and splitting it the entire mass was easily removed. The woman is cured of the prolapse. She does not realize that anything has been done to her. The entire absence of shock is one of the marvels of surgery.

If vaginal hysterectomy is safe enough for removal of myomas, then comes the question of removal of the uterus for prolapse. You know the difficulties of recurrence of the trouble, the operation for prolapse, and all the different things tried. Finally Martin propounded removal of the uterus for prolapse. Now it is done by many and laid down as a proper thing to do. If a woman has prolapse and is past child-bearing

slip the uterus out; it is the easiest thing in the world. When we can remove the uterus by the vagina so readily I cannot see the need of doing it from above for prolapse. Polk in New York does this.

What are the remote bad results of removal of the uterus and appendages. What has been charged against it is, in the first place, production of insanity; and, in the second place, the production of obesity; and, in the third place, loss of sexual desire, by which I suppose is meant sexual feeling. Now, in regard to the production of insanity. It is a fact that various gynæcological operations are followed sometimes by insanity. I remember out of perhaps some 800 cases in the Murdock Hospital there were some three cases of insanity, all of which recovered. I had one case at the Charity Club Hospital where, after removal of a large fibroid, the woman became violently insane in a few days, but she recovered. I have one case of a fibroid removed two years ago, where the lady, although apparently sane, confesses that she has occasionally suicidal tendencies. She wants to commit suicide, but knows it is wrong and does not do it. How far that is insanity some of the alienist experts will tell.

I reported last year fifty abdominal hysterectomies for fibroid. Those included only the ones I did at the Charity Club Hospital and in private practice. During the last year at the Charity Club Hospital I have done eleven abdominal and vaginal hysterectomies altogether, and out-side about twenty. Now out of over one hundred and thirty abdominal and vaginal hysterectomies the only permanent bad effect of any kind I know of is in this lady who says she has suicidal tendencies.

In regard to the removal of the ovaries and tubes, we are getting on ground which is not quite so

satisfactory as that for the removal of the uterus. The removal of the uterus is done for certain very definite indications. It is done for cancer or fibroids or prolapse, or by the extension which some operators are introducing now as a means of getting rid of the whole trouble at once, when the uterus is retroverted and adherent, or when the tubes are badly diseased and the interior of the uterus inflamed with gonorrhœa, etc.; therefore, you have certain definite diseases or states or troubles which are, I might say, mechanical, at any rate not nervous. You can see and feel and demonstrate them, and the woman knows what she is cured of after she is operated upon. In regard to the removal of the tubes and ovaries we get into a mixture of several different conditions. If a woman has tubes and ovaries diseased, full of pus, big as potatoes perhaps, and high temperature, likely to die, chills, it is one's duty to remove it. You let pus out anywhere else, and you must let it out there, and what the remote effects are, is of no consequence; you get her out of immediate danger. If the woman has catarrhal salpingitis, or the remains of old salpingitis, which has bound the tubes and ovaries so that every month she is in agony, if she has had packing tried, the uterus pried up, pessary used, and goes from one doctor to another, damning the last one all the time, it is time to do something, and even if she is not entirely cured by removal of the appendages she is cured of the worst of it and she gets over this agony every month; then comes the question how much she is cured. A certain proportion of these women continue to suffer. It is partly owing to conditions which could not be helped at the time; the uterus was brought up, possibly does not stay up; there may be adhesions to the bowels, to the abdominal wall. Some of us keep running across these cases.

I have had a case where a woman could not control her urine at all for three or four years. I found a ligature which had included one of the epiploic appendages with the stump of the ovary and was pulling and pulling and twisting, and the epiploic appendage and a bit of the top of the bladder and stump of the ovary were all together, with this ligature in the middle. Her sufferings were because something had not been done quite right. In another case you will find firm adhesions to the abdominal wall, somebody has not pulled down the omentum; or there has been an adhesion of the intestine to the abdominal wall; or it may be that there are adhesions of the stump to the intestine or the bladder. There are these different complications, and they require the thing to be done over again, and a great deal of that work is gradually being done. Sufferings are caused by the fact that there is still some trouble which may require another operation.

Another class of cases is where there are cirrhotic ovaries. The great trouble is dysmenorrhœa. First the woman has medical treatment, then gets a surgeon, gets dilated, curetted and packed with gauze and does not get any better, and somebody has to sit up and give her chloroform and load her full of morphine at every menstrual period, and finally she has to have an operation, and you find something of which very little is said in the books. The first stage seems to be an enlargement of the ovary. It becomes large and white; gradually that white tissue begins to shrivel, until the ovary keeps getting smaller and smaller and harder and harder until there is no chance to swell and let the ovum out, and the woman suffers tortures. After she has suffered that way for years, her nervous system is broken down; that is the result of the long-continued injury to the nervous system by the disease.

There is another class of cases, however, which are the weak-backed sisters, who do not have any anatomical disease that can be discovered. They have pains, aches, miseries; they may have studied too hard, may be neurasthenic by nature, and they are very apt to suffer from dysmenorrhœa and finally somebody comes along and removes the ovaries and they do not get a bit better. It is just as if a woman has neuralgia in the teeth and you pull the teeth and it goes back of the ear. These women are miserable and would be miserable, and no operation I know of will stop it. The surgeon gets to recognize them as a "holy terror." The distinction in my judgment is that the pain does not limit itself strictly to the menstrual period. With the cirrhotic ovary, as I have found it, the pain is strictly limited when the ovary tries to functionate; but the woman who has pain in the head, pain in the back and pain all over is not a good case for surgery. Some of those women were operated on years ago. It is especially these cases where there is little to go on except pain which are the legitimate causes of reproach to surgery, and I do not think surgeons are now as ready as formerly to interfere with those cases.

Then come the cases where the ovaries are removed for dysmenorrhœa where there is a real anatomical basis, such as inflammation of the ovary, suppuration of the ovary, inflammation of the tube, adhesions; those are removed for disease, not dysmenorrhœa. The woman has a right to have them removed, and if she is not entirely cured it cannot be helped.

There are cases where the ovaries are removed for other kinds of nervous symptoms; in the first place, for hystero-epilepsy—epilepsy coming on at the ovarian period and no other time. I have not seen many of those cases. I have operated in two; one

was cured and the other ameliorated, but not cured. I avoid such cases as much as I can.

The cases where the ovaries have been removed in case of insanity with the effect in a certain proportion of cases of curing the insanity have been, so far as I know, always cases of disease. The woman after long-continued suffering finally breaks down, gives way in the intellect and is put in an asylum, and is found to have an old pus-tube or retroverted uterus bound down, which is the centre and starting point of suffering and probably of a long course of morphine, and not a very small number of those cases have been operated on and occasionally cured. The cure is not on account of the removal of the ovaries—it is on account of the removal of an inflamed and irritating mass, and it is possible it might be something else than the ovary, and the removal of it might have the same effect.

Then come the cases where the ovaries have been removed for nymphomania and masturbation approaching idiocy. I have had only one of those cases. The woman was becoming insane, a terrible sufferer from masturbation, utterly miserable, and felt she had committed the unpardonable sin. Within two days from the operation, said she felt as if a weight had been rolled off her soul; she got well. It took her six months to recover her nervous health. She first did work for her sister and helped about the house, and then came to me and confided that a widower with four children wanted to marry her, and I advised the marriage. That is the only case of that kind I have seen reason to operate on.

In regard to this there is at present a sort of a reaction in surgery. It was started a year or two ago by a paper by Dr. Goodell, in which he set forth the various woes and evils which might follow removal of the append-

ages. Dr. Polk, at Washington, at the meeting of the Congress of American Physicians, spoke something in the same strain. Goodell called attention to the fact that removal of the appendages which brought about the change of life caused not only the temporary symptoms, flushings and various miseries which women must inevitably pass through at some time, but it soon brought about atrophy of the vagina and external genitals, in many cases, and in some a loss of sexual desire and feeling, which certainly is a serious matter. My experience, however, has been very different from that reported by Dr. Goodell.

I have taken pains to inquire into this both personally and through the superintendent of my private hospital, who is a lady physician. The women talked frankly, and almost none of them complained of or admitted that they felt any difference in their sexual desires or feelings. As a matter of fact the sexual *desire* is not a condition in which most women take pride or feel it is anything to be particularly cherished or desired. It is rather an uncomfortable state. The ability under proper circumstance to have as much sexual feeling as they previously had is not impaired in the vast majority of cases. On the contrary, in all these cases where there has been inflammatory trouble, where the women have been made sick, where they have been nursing a tender ovary, the removal of that cause of suffering and extinction of sexual desire has been of very great relief. The removal of the uterus has no more effect than removal of the ovaries. Many of the women are married women, and they tell me they are just as well off as they ever were. That some of them grow stout I also believe, but some women grow stout anyway, and being laid off active exercise and pretty well fed and urged not to do anything and

having good care, is a good beginning to getting stout.

Therefore, to sum up, my experience has been that the removal of the uterus has no more evil effects than the removal of the appendages alone, that the removal of the appendages alone has in itself, under very rare circumstances, a loss of sexual feeling which is to a certain extent regrettable, but those instances are very rare, and if we take one hundred women whose ovaries are removed I very much doubt whether you would get a much greater proportion who gradually lose their interest in sexual matters than without the removal of the ovaries.

DR. MAURICE RICHARDSON.—I was very glad to come to this discussion, but I have very little to say on the subject of the evening,—the late effects of removal of the uterus and ovaries—for the reason that I have not been able to follow the cases. I agree with Dr. Cushing that removal of the uterus and the tubes and the ovaries for disease is so imperative that we need trouble ourselves very little with the remote results, I mean results of discomfort or slight alterations in the mental make up of the woman; when the cause is cancer we have got to abandon everything except the saving of the woman's life, prolonging her life. The question whether this or that or the other thing happens makes no difference with the operation whatever. The same thing is true and in more marked degree because the results are so much more favorable in malignant adenomas of the uterus. I think the question of remote result is more important in removal of small fibroids. I am one of the conservatives who do not believe as yet in the necessity of removal of small fibroids, although I have seen one malignant degeneration and two or three cases of abscess connected with a fibroid of considerable size. Applying to my patient the rule I would apply to any

one very dear to me. I would not even with the brilliant results of myomectomy or hysterectomy want to subject a patient to operation for a small fibroid as yet. The results of hysterectomy are so brilliant, the operation of vaginal hysterectomy is so beautiful an operation, the modern operation of abdominal hysterectomy has removed many of the objections, in fact perhaps all the objections of the operation when the cause is very evident, when the results of this cause are distressing and undermining the health, or when there is any considerable danger of malignant degeneration of a benign tumor or when from situation of a small tumor the ureter is pressed upon or any other well-marked disability is present; but, when we come to the subject of the evening, the removal of the healthy ovaries and tubes or the removal of the uterus for mental conditions or for disarrangement of the nervous system, we come to a question which interests me very much, and one upon which I can throw very little light from experience. I have always followed the teaching of Dr. Homans in not taking out healthy ovaries except under extreme provocation, so to speak. I have removed healthy ovaries in an idiotic girl at the request of her father and mother for the purpose of warding off scandal. She was a weak-minded, erotic girl, and I thought that was justifiable. In another case I operated on a girl addicted to masturbation, also at the request of her father and mother. I have not heard from that case since, so that that throws no light on the matter. In another case, and I think that is the third and last one of removal of healthy ovaries, a woman was distinctly impaired mentally, melancholic at times, at times violent, and a great burden to herself and family. I operated upon her a little over a year ago, and I think there is no doubt from the evidence of herself and her

sister, who spent her life taking care of her, that the woman was enormously improved, has had no return of the melancholia and no trouble since except from the appearance of carcinoma in the breast.

Now, there is another class of cases which Dr. Cushing has very well described, and I think we are all familiar with the cases—that is the neurasthenic women. The woman complains of pain in the abdomen or pain in the region of the ovaries, and perhaps has some dysmenorrhœa. I might add that you will find some slight bending of the uterus upon the cervix, perhaps some very slight physical variation from the normal. Now, in these cases, which last many years and have been in the hands of many different men, I think it is a very important question what to do for them. I have seen a great many of these cases. They have been sent to me by a number of my friends who are surgeons, who did the operation, for confirmation of their opinion of advice against the removal of the ovaries. It is on this branch of the subject I think that discussion is of value and experience of value. I have always taken the position that removal of the ovaries is a confession of failure. If we have a young woman and remove her ovaries, we do the very first thing which should be perhaps reserved for the last, as a last resort. When a patient comes to me who has been in the hands of different men and abuses them all, I think it is very wise as a rule not to operate on her, because you will be the next man to be abused surely. That may not be a good reason for refusing to operate, but if I have ever observed anything in neurasthenics in cases where there is not evident disease I have seen that whatever you do to them makes them worse. I do not think I can recall any operation upon a so-called neurasthenic that has ever done any good. I do not now speak of

operations on the ovaries, but operations on so-called nervous joints. Operations upon women who have their symptom on the brain are, as far as I can observe, in all parts of the body of very doubtful efficacy; they are productive in almost every instance of harm; the patients are worse and the subsequent complaints are all attributed to the last operation and to the last operator. In the cases Dr. Cushing speaks of, in which there is an anteversion or retroversion with dysmenorrhœa, and in which the patient's nervous system is breaking down under repeated and continuous strain, it seems to me in cases of that kind we have a much more promising outlook than in the cases in which the nervous element predominates; and yet in those cases it seems to me it is a pity we should begin our treatment by applying the remedy of castration.

With reference to other effects that Dr. Cushing has spoken of from ablation of the genitals, I have no experience whatever. I have removed the ovaries, tubes and uterus for well-marked disease a large number of times, but I have not as yet worked up the subject. It is a very hard thing to get a frank avowal from patients. Some of them are very much offended if you ask in reference to the sexual part of the subject. That is a work which every surgeon ought to carry on, and which I shall carry out in reporting the results of my work. I look forward to hear what Dr. Edes and Dr. Putnam have to say in regard to the effect of these operations on the nervous system. I supposed that was the chief topic of discussion. I am sorry I have not more facts to bring forward, but from what I have read and the experience of others, the discussions I have heard, we are a jury sitting on a very important question. My own feelings have always been against the removal of these parts unless there is some

very good reason for it, and those as I have stated have been when, by the advice of men like Dr. Edes or Dr. Putnam, the distress is so great that almost anything seems justifiable and when all palliative measures have failed.

DR. PUTNAM.—There is only one part of the subject on which I feel qualified to speak, and I do not know that I can throw light upon that. It is an excessively important matter, and one about which we ought to make up our minds as well as we can. There would seem to be entire agreement with what Dr. Cushing said,—two classes of cases which one can separate in a general way, those where the ovaries are diseased and where the operation is undertaken for direct or indirect result of disease, and those where the ovaries are, as far as we know, healthy. I think it may be said, however, that so far as I know it is a rather difficult matter to determine whether the ovaries are healthy or not. Some years ago I collected and reported at the meeting at Washington a number of cases which had been operated on by Boston surgeons. I was very much struck with the fact that in Dr. Johnson's cases, although there had been no manifest signs of the disease before the operation, that the microscopical examination showed that they were not really healthy. He found signs of conditions which were at least a departure from health. I think the question which presents itself to us most strongly is this, whether the removal of the ovaries is ever a suitable treatment for the clear cases of one of these functional, nervous diseases,—hysteria, neurasthenia, hystero-epilepsy, neuralgia of the general type or insanity.

Now, I think, to begin with, it is only but fair to state what it seems to me is the neurological opinion of the present day on that subject, and

I think that would be decidedly as Dr. Richardson has stated against operation. Dr. Mitchell and Dr. Goodell have stated, in unqualified terms, that they think it never justifiable. At this meeting in Washington, Dr. Lusk and Dr. Sinclair, of Philadelphia, with Dr. Mitchell, put themselves quite strongly for this position. Dr. Edes reported a number of cases in this last year which gave an unfavorable showing for this operation, several deaths, and on the whole the good results were very few. I hold in my hand what, so far as I know, is the latest monograph on the subject, a paper published this year by a physician of Berlin, a paper containing many good points, which takes the position that operation is not a suitable treatment for these diseases, and that the adoption of it is based on incorrect conception of the nature of the trouble for which it has been used.

I cannot but think that there is something to be said on the other side. In the first place, among these cases which I collected there were a good many excellent results. Dr. Richardson speaks of the fact, which we all know to our regret is largely true, that the neurasthenic patients are hard to treat by any such method, and often hard to treat anyway. With them the results are not brilliant; nevertheless I know a patient who could be called neurasthenic who suffered from pain in the back of the head, sleeplessness, general distress, a nervous patient, and she obtained extreme relief from the removal of the ovary, which turned out to be somewhat enlarged and excessively hard. The operation was done by Dr. Elliot. She was not one of the worst types of neurasthenics. It seems to me we ought to take that into consideration. The fact that we do occasionally get very great improvement and occasionally cures, which, if they do not establish an operation on a

satisfactory basis, are nevertheless worth something. The operation is a matter of last resort, or I suppose should be, and if from a lot of insane persons one gets relief in this way that is something.

Of this class of cases for which the operation has been done I think we should make distinctions. They are not all equally susceptible to cure, and the severest are least susceptible of cure. More can be accomplished in the relief of vague pains and lesser degrees of nervous disorder than in the relief of well-marked hystericepilepsy, for example, if of hereditary basis, or of insanity or real epilepsy; and yet occasionally true epilepsy seems to be relieved in that way.

The question arises as to the nature or the theory of the operation. If it does good, how does it do good? Is it coincidence, or is there any rational basis? In regard to that point it seems to me we are still a good deal at sea. This monograph of which I speak deals with that matter. It points out that hysteria is now conceived of as a mental disease, and if that be cured it is by mental means. He reports a number of cases in which diseases were not cured, but made worse. It seems to me, however, that although these diseases are mental and to be dealt with by mental means that sometimes an operation becomes a mental means. If a patient's mind has been concentrated on and looks forward to such operation that may furnish just the suggestion which is needed to bring about the cure, and it seems to me if we can set aside cases where the ovaries are really the source of local irritation, that that is the way the operation is to be regarded. It is not so much the bringing on of premature menopause as it is the inducing of a new state of mind, which is more favorable to recovery. We should not deceive ourselves about the matter. Many patients complain not only about the

ovarian pain, but of general pain. Charcot tried to set aside a special form of hysteria, which he called ovarian hysteria. The pain and the results which can be brought about by pressure in the ovarian region are well known. Now I think it is acknowledged that that symptom is simply a reflex symptom, that no matter how well localized this pain and distress may be, whether it radiates down the thigh in a manner to suggest the crural nerves, nevertheless it is quite capable of being purely a symptom of hysteria, of neurasthenia, just as pain and tenderness in the back may be entirely apart from any local condition, and therefore I think it is important that this fact should be recognized, that we should not remove ovaries for pain which has its source in the mind. If there is anything to be gained by the operation, and it seems to me occasionally there is, it seems to me that is due to the removal of ovaries which are really more diseased than we can tell from the outside, partly perhaps by the induction of premature menopause,—although I think that is less important—and partly to the establishing of a more favorable mental condition. We must ask whether there are not other means to be used, and of late I think a careful study of mental therapeutics, the light thrown on it by hypnotism and suggestion has enlarged our power of dealing with these patients in this way, and we ought to use such means before we resort to those of surgery.

PATHOLOGICAL SPECIMEN.

Dr. CUSHING.—Here is a uterus which I removed on Friday from a woman who had had twelve children and had a prolapse. The uterus is badly torn on one side. I was not going to remove it. I was going to do an anterior and posterior colpor.

rhaphy and curette it. I dilated with the slightest pressure and felt something give a little. I passed the sound and felt it went far up. Not knowing whether it was going into the broad ligament, or thinking it might have gone into the peritoneal cavity, I concluded to remove the uterus. That made a short, light operation. If I had not done that what should I have had to do? In the first place, that cervix would have had to be very carefully repaired; secondly, anterior and posterior col-

porrhaphy and repair of the perinæum would have given an operation four times as long. I show it as a caution how little effort in certain cases may tear the uterus. This patient made a good recovery.

It has not been mentioned to-night, but there is one cause of suffering that many set down erroneously to ovary, and that is varicocele of the pampinniform plexus. It is liable to give rise to various sufferings, will give rise to pain, pressure, nervous and mental symptoms.

Transactions of the Detroit Gynæcological Society, January 9, 1895.

DISCUSSION—THE USE OF FORCEPS IN LABOR.

THE President, E. T. TAPPEY, M. D., in the chair.

DR. C. J. JENNINGS: — I owe the Society an apology, as I did not understand until this evening that this discussion was the main part of the program. I thought there was to be a paper to discuss, and I have not had an opportunity to make any preparation. There are three main types of forceps, the long, of which the Simpson and Hodge are types, the Tarnier, or axis traction forceps, and the short, of which there are various models. I shall confine my remarks almost entirely to the use of the short forceps in labor. I think it can be taken as a truth that the more gentle the interference with instruments in labor the less difficulty there will be, and the less likelihood of lacerations and post-partal complications. Every interference should be made with the greatest delicacy and we should use the most delicate instruments.

Forceps are usually demanded, not on account of bony obstruction in the pelvis or undue size of the head, but rather for rigidity of the soft parts,

or more properly speaking, for lack of force of the uterine contractions. In the higher walks of life, women not prepared for the suffering which labor brings them, demand relief by anodynes and anæsthetics earlier than they should, and as a result of this high-tension nervous system we are apt to get feeble uterine pains, and in order to put an end to the difficulty the physician resorts to the forceps. Under these circumstances I think that the short forceps can almost always be used to better advantage than the larger ones. I am in the habit of using the Jenks short forceps, which is simply a small Simpson. It is long enough to reach the head high in the excavation, delicate enough for every indication, and, to my mind and my method of conducting a delivery, it seems to fill the bill. It is simply a delicate instrument which is used where there is no bony obstruction and is practically an extension of the hand. The hand grasps very closely to the blades, and on that account there is very little leverage used. The shortness of the forceps, I think,

is a great advantage, as it does not demand the great sweep that the long forceps does in delivering the head over the perineum, and in the hurry usual at the end of a delivery this sweep is often not taken with sufficient rapidity by the accoucheur and there is danger of laceration. Again the instrument is small and every particle of space possible is saved for the head. It seems to me that the instrument is particularly adapted to the ordinary forceps delivery when the only obstruction is from the soft tissues and insufficient uterine contraction. Again, owing to the fact that the instrument is delicate, it can be used under other circumstances.

The forceps is not ordinarily an instrument of rotation, and authorities speak against its use in circumstances demanding rotation, but my observation with the small forceps is that it can be used as a rotating agent, and very successfully. I always apply it in the occipito-posterior position, even where the head is high up, and I am usually able to rotate the head and transform the position. I have done it so repeatedly that, unless there is disproportion between the head and the pelvis, I am convinced that it can always be done. Then it can be used where it is necessary to begin labor where the head is high up, though in these cases I favor full dilatation with the colpeurynter and then the application of the large forceps.

Another use I tried twice, once with satisfaction, while in the second the delay was disastrous, and that is, in delivering the aftercoming head. In the first case I was delighted with the rapidity with which it could be applied, but in the next case, which I saw with Dr. Longyear, we were delayed and the infant was lost. The head usually under these circumstances is low down, and instruments must be used that can be applied with great rapidity. Where it is necessary to use

force the short forceps is not to be thought of. I think the large forceps is unnecessarily large and altogether too formidable for the insignificance of the condition to which it is applied. It is to be remembered that the individual may be particularly adapted to the instrument whether it be large or small, but for my part I am firmly convinced that the short forceps can be used to the benefit of the mother much more frequently than it is.

Dr. A. W. IMRIE.—Dr. Jennings has so completely covered the ground that very little remains to be said as to the indications for the use of the forceps in labor. I agree with what he said as to the choice of instruments, preference being largely influenced by what we are accustomed to. It is very evident he is not a student of the French school, which prefers the long instrument. I believe in the use of the short forceps to facilitate and bring about rotation in persistent occipito-posterior position, and thus terminate what would otherwise be a very slow labor. In cases of resistant perinæum I think we often wait too long. If the head is well down and there is no advance, say after waiting an hour or an hour and a half, only further trouble can be incurred by delay. Where the head is above the pelvic brim I can hardly conceive of the applicability of the short forceps. It would not only be very difficult or impossible to grasp the head, but you could not make the necessary pressure to compress the head and bring it down into the cavity in the event of your succeeding in applying the forceps to it in that position.

(Dr. Imrie here exhibited Dr. Hugh H. Hamilton's clamp for the obstetric forceps. This instrument was fully described on page 103 of the November number of the ANNALS).

I think that with the forceps we can very frequently save the perinæum. I do not believe rupture is brought about by the forceps so often

as some people think. The advance and directions of the head can be regulated by the forceps often better than by the hand. Of course where it is necessary to deliver very rapidly, as in eclampsia or hæmorrhage, a powerful instrument must be used, and then the Tarnier best fills the indications, being a very serviceable instrument in these cases, as well as where there is great disproportion between the pelvis and the child's head arrested at the brim.

Dr. J. H. CARSTENS.—I myself cannot take much stock in this clamp arrangement,—it is so harsh; and that is the objection I have to the clamp on the Tarnier forceps. I think delicacy is necessary, so that even when I use the Tarnier I seldom use the cross-piece. I cannot see why a woman should be allowed to suffer for hours and hours when you can deliver in a few minutes with the short forceps. I do not consider it meddlesome midwifery. At the same time I think the Tarnier forceps has a decided use at times, and I consider it the greatest and only real improvement since the days of the Chamberlen. I use all kinds, whatever the doctor I assist happens to have, but the Tarnier certainly saves the lives of a great many children, which before it came into use would have been sacrificed by craniotomy. You can compress the head and deliver at the superior strait with great facility, and, where I used to pull with exertion, I can with the Tarnier accomplish the same results with very slight exertion. I am talking about slight deformity of the pelvis in the cases where this forceps is used. Attempts are often made to deliver with the Tarnier in cases which should properly be treated by cæsarian section or symphyseotomy. I have seen the perinæum torn as much without the forceps as with.

Dr. H. W. LONGYEAR.—As regards this clamp for fixing the forceps on the child's head, as a rule it seems to

me it would be a dangerous thing to use. I generally try to prevent squeezing the head too hard. The forceps when applied, are naturally held together, kept in place and prevented from slipping by the pelvis of the mother, and you do not need to squeeze the handles together as though pulling a tooth.

It has been my practice to be guided a good deal by the sensations that are carried to my hand as I am delivering with the forceps. If I find them slipping I unfix the blades and apply them again a little higher. With the clamp you fix the blades on the child's head, and when, after some traction, you find them getting loose, by reason of compression of the head and slipping of the blades, you tighten the screw. The result will be that when the child is born you find an injury to the head which it will carry through life and which will be pointed out as the scar the doctor made, and generally the doctor's name will be mentioned. In very skilful hands it might not be so dangerous, but I would not recommend it for general use. The assistance of the short forceps in delivering the head over the perinæum and in preventing rupture is very great. You can guide the head and manipulate it in a way that you cannot do with long forceps and cannot do without any forceps.

There is one point I particularly wish to emphasize, and that is in cases of difficult and impossible labor when *not* to apply the forceps. This should be impressed on the mind of every general practitioner, as great injury is too often the result of attempting to pull a child through an opening through which it cannot possibly pass. Where it seems impossible to draw the head through the pelvis the forceps should not be applied, or at least little manipulation made, until it is decided whether symphyseotomy, craniotomy or cæsa-

rian section offers a better chance. The success of these operations is often prevented by previous injury to the maternal parts by efforts to deliver by means whose futility could have been demonstrated by proper measurements.

Dr. J. A. WINTER.—Most of the short forceps I have seen have been so light, that it seems to me that any case in which they could be applied would terminate all right without any interference with instruments. I think the use of the clamp would be dangerous. I use a heavy Simpson forceps and my method has been just before the head comes over the peritonæum to slip one blade off and use the other as a lever. I know of some cases that were ruptured that would

not have been had forceps been applied.

Dr. W. R. CHITTICK.—I always carry both the long and the short forceps and I use them frequently I like to use the short forceps because it saves the patient a lot of suffering, and, if skilfully applied, does no harm. I do not think it adds to the danger of rupturing the perinæum as most of the ruptures I have had have been by the shoulder, not the head. If rupture is imminent I perform episiotomy.

Dr. E. T. TAPPEY.—The subject of episiotomy is rather interesting to me. I only performed it once in my career and ever since I have wondered if the perinæum would have ruptured anyhow.

Societe Anatomique de Paris.*

MEETING OF NOVEMBER 23, 1894.

Dr. CHAPUT, President, in the chair.

INFECTION OF UNKNOWN NATURE, SIMULATING ACUTE LYMPHADENIA. BY DR. CHASTANET.

Marie N., aged 24, entered Dr. Verchère's service at the St. Lazare Infirmary, on June 20, 1894, for vaginitis and urethritis. The patient was syphilitic. Some small, hard, indolent glands were found in both groins.

Towards the end of July, a canneiform eruption appeared, disseminated over the entire body, but was thicker on the trunk and at the roots of the limbs. After rupture of the pustules, the eruption became copper-colored and a slight desquama-

The appearance of an angina, with erosive mucous patches on the uvula and pillars, confirmed the diagnosis of syphilis.

Specific treatment was prescribed, consisting of 10 centigrammes of protiodide of mercury.

In the commencement of August a tumor suddenly developed on the right side of the neck, on the level and below the angle of the jaw. Two or three days later a like growth appeared on the left side.

By palpation, it was easy to find more enlarged cervical glands, which were grouped *en masse*, but perfectly distinct one from the other, and were not adherent to the neighboring parts. They varied in size from that of a filbert to a large walnut; their consistency was elastic, but relatively hard.

What was most singular in the

* N. B.—Only the subjects relating to gynecology are reported.

tion took place, giving them the typical aspect of papular syphilides. evolution of this adenopathy was the rapidity. On the right, as on the left, the bunches attained the size of a closed fist in three days and then remained stationary.

At the same time some circulatory symptoms appeared, puffing of the face, slight cyanosis of the lips and tip of the nose, which we considered as being due to compression of the jugulars. No other glands were found in any other part of the body. Those in the groins remained the same size and consistency that they had when the patient entered the hospital.

Treatment prescribed (corrosive sublimate, 3 centigrammes, arseniate of soda, 5 milligrammes, iodide of potassium, 3 grammes) produced no improvement, and the local condition remained stationary up to the end of October, while the general condition became worse. The skin became pale, the mucous membranes were colorless and the patient fell into a most extreme weakness.

The mucous patches in the throat, which had disappeared, returned about October 15th. On October 19th, a subcutaneous injection of 10 centigrammes of calomel was given in the left buttock.

It was while in this state that the patient was suddenly taken with fever on the evening of October 26th; the temperature in the vagina was 39° C.

On the following days it remained between 39° and 40° with hardly two or three-tenths of a degree remission in the morning. The patient complained of noises in the head and weakness. There was some diarrhoea and vomiting.

No eruption or spots could be found. The abdomen was soft and painless. The lungs were normal; heart beats regular, but slightly weak; no souffle, palpitation or dyspnoea. At this time

our attention was drawn to the tumor in the neck, which had disappeared as if by enchantment, between Oct. 30th and 31st. A single gland remained on the posterior border of the right sterno-mastoid muscle, at the angle of the jaw, and was the size of a filbert. For two or three days the urine showed slight traces of albumen.

From this time on the patient became weaker every day, complaining only of noises in the head, but did not suffer. However, on November 3rd, a zone of hyperesthesia, the size of the palm of the hand, was found over the region of the gall-bladder, but disappeared for good on the next day. The liver came to about two finger's breadth below the ribs; the spleen was hypertrophied. From Nov. 4th to Nov. 8th the temperature remained at 38° C., when it fell in the morning to 37°, but in the evening it was 40° C., and even above, quinine remaining without effect upon it. At this time a slight feebleness of mind was noted, with delirium at night.

On Nov. 18th, the patient having seen a typhoid patient die in a bed near her, was taken a few minutes after with an attack of suffocation, with convulsions and cyanosis, and died suddenly in the morning.

During the febrile state, the absence of an eruption, the temperature curve and the symptoms generally eliminated the diagnosis of an eruptive or continued fever and acute phthisis. No trace of superficial or deep suppuration could be detected. The diagnosis of lymphadenia was the most probable. Unfortunately no examination of the blood was made, so that it cannot be known whether the lymphadenia was leucemic or aleucemic. The glands of the neck and groins were the only ones found enlarged.

The tonsils were not enlarged and only a slight inflammation of the

throat was noted, lasting for a few days.

Autopsy.—Subject thin, no trace of œdema. No liquid in the pleuræ. Passive congestion at the base of both lungs. The heart was small; the muscle was flabby and pale; the orifices were normal. The intertracheo-bronchial glands are very large on the right side, forming a mass the size of an egg, and composed of three or four glands the size of small nuts, and a large number of smaller ones. Other than this bunch no other glands were found in the mediastinum.

The right pneumogastric nerve was between this bunch and the trachea. The left nerve was free. The trachea and aorta were not compressed. No liquid in the peritoneal cavity. The liver was enormous, weighing over two and a half kilograms. On section it was greasy and slightly congested. The spleen was large (length 18 centimeters, breadth 10 centimetres). Its substance was black, and soft, capsule was normal. Kidneys normal. The intestine was congested, but Peyer's patches were all normal. No mesenteric glands. The bone marrow was not examined.

Remarks.—This case appeared interesting to me in several ways; in the first place from the rapidity of the evolution of the disease (less than four months), and secondly on account of the adenopathy being distinctly limited to only two glandular masses, the cervical glands and those of right intertracheo-bronchial space. I was also struck by the almost sudden disappearance of the glandular tumefaction in the neck as soon as the fever began, and, lastly, the character of the fever was interesting, because for twelve days the morning temperature was about 37° C., and rose in the evening to 40°.

The sudden death was a surprise. The intertracheo-bronchial glands

did not show their presence by any symptom of compression. Death appears to me to be the result, not of compression, but to a sudden exaggeration of general phenomena.

Drs. LETULLE and LETIENNE remarked that the clinical symptoms in this case were not like those of the affection usually described under the name of lymphadenia.

An infection of unknown nature appeared to have developed in the case of Dr. Chastanet, which was a syphilitic subject presenting large adenopathies, and that was all that could be said.

Dr. VERCHERE said that it was this undetermined infectious nature which rendered the case interesting. He thought that the increase in size of certain glands might recall lymphadenia.

INGENAL HERNIA OF THE BLADDER, TUBE AND OVARY. BY DR. E. REYMOND.

Mrs. A. L., housewife, age thirty-eight, entered Hôpital Bichat on Oct. 17, 1894, in the service of Professor Terrier, for operation on two herniæ, one in the region of the umbilicus, the other in the left inguinal region.

Hereditary antecedents are without interest. She has menstruated regularly since the age of fifteen; the menses are not painful. One child six years ago.

The inguinal hernia has existed since the patient was two years old, while the umbilical came on three years ago.

The patient said that the inguinal hernia was easily reduced up to the time of her labor, and that since this she has experienced sharp pains in it, and the hernia ceased to be completely reducible. The pains lasted up to the time of operation.

The patient had never noticed that the pains were sharper at the time of the menses, nor that the size of the hernia diminished after urinating.

When the patient entered the hospital the inguinal hernia increased in size on coughing, but if the intestine it contained was reduced, a mass the size of a hen's egg remained, which was dull, hard, and reached to the pubic spine, and appeared to have the characters of irriducible indurated mesentary.

I have said that the umbilical hernia developed three years ago, and the patient had always suffered from it. My friend Jourdan operated this hernia on Oct. 22, with perfect recovery. On Nov. 19th I operated on the inguinal hernia. On opening the sac I found a few coils of intestine, which were easily reduced and did not adhere.

Below was found the Fallopian tube, which adhered behind to a reddish and resisting mass. The ovary was situated at the orifice of the hernia. It was, as can be seen, increased in size and fibro-cystic; the largest cyst was sanguinous and adhered to the borders of the orifice. The tube was slightly increased in size, red, permeable, and presented the characters of a catarrhal salpingitis. Once freed from its adhesions, it bled abundantly, and I removed the adnexa, after enlarging the incision and having placed a loose X-shaped ligature round the uterus.

I could then see that the organ remaining in the hernia was no other than the bladder. It was contained, at least in the greater part, in the sac, its upper side adhering to the tube, while the under side was intimately connected with the underlying structures, so that it was difficult to estimate what part of the under aspect was included in the sac and what was out of it; in other words, at what point the peritoneum reflected itself from the sac to the viscera.

After breaking up the adhesions the walls bled freely, and I was obliged to compress this part of the

bladder for several minutes and to touch it with the thermo-cautery, before returning it into the abdomen.

The abdominal walls were closed by three plans of sutures; the results of the operation were good, the patient leaving the hospital in three weeks, with solid abdominal walls and no longer in pain.

Remarks.—I do not think that in this case any hesitation could be possible as to the treatment of the adnexa. The ovary was in a sclerocystic condition and the tube inflamed; it appeared indicated to sacrifice them.

The abdominal incision, which I was obliged to enlarge so as to place the suture near the uterus, allowed my making the diagnosis of vesical hernia, which would have been difficult if it had not been done. The aspect of the bladder was absolutely different from that described in books. The walls of the bladder are described as being generally thin, while in my case they were considerably thickened. Perhaps this difference was due to inflammation which appeared to exist between the bladder and tube. On the other hand, quantities of adipose tissue are said to surround the bladder in hernia and to play such an important part in its production, according to Monod and Delagenière, while in the case related there was not a speck of fat on the wall of the bladder included in the sac.

In this respect the question arises as to whether a distinction should not be made between the cases in which the bladder is covered, and those in which it is not covered, by the peritoneum.

I had this year the occasion of observing, during a kelotomy, a vesical hernia of the last mentioned variety. When we pulled on the peritoneal sac while detaching it from the ring, a mass covered with an abundant yellow fat bulged out, and we found that it was the bladder.

But in this case the bladder appeared outside of the sac, while in the one just reported the organ was in the sac itself.

The part which presented in the

first place corresponded to the left postero-lateral wall, covered with the peritoneum, and was exempt, in this case, of any trace of adipose tissue.

REVIEW OF GYNÆCOLOGY.

THE TREATMENT OF MYOMA OF THE UTERUS. By Dr. A. F. CURRIER.

The author admits that Apostoli's treatment diminishes the intensity of the most urgent symptoms of myoma, but he does not believe that it can bring about a radical cure. Ergot is not without danger, as it has produced gangrene and septicemia. Ablation of the ovaries and tubes does not always put a stop to hæmorrhage produced by the neoplasm. The surgeon is consequently often obliged to remove the uterus and tumor. Dr. Currier ends his paper by saying: "In the near future I believe we shall more frequently resort to radical measures in the treatment of myoma than is now deemed admissible, and, as in the case of ovarian tumors, we will not wait until the patient has been reduced to extremities by pain and hæmorrhage or by such extensive growth that an operation will offer unusual difficulties." (*American Journal of Obstetrics*, Jan., 1894).

ELECTROLYSIS IN THE TREATMENT OF FIBROMYOMA OF THE UTERUS. By Dr. CANDIA.

From his personal observation, the writer is conclusive as to the real value of intra-uterine electrolysis (Apostoli's method); it diminishes the hæmor-

rhage and pain. He advises the change of current during the applications, especially when there is pain. In painful fibroids without hæmorrhage the intra-uterine pole should be the negative. The intensity of the current should vary from 50 to 130 milliamperes, without going as high as 300, as some writers recommend. This electrical treatment is useless in sub-peritoneal pediculated neoplasms and in cases of concomitant lesions of the adnexa. (*Giornale internaz de Medicine*, 1894; review in *Annales de Gynécologie et d'Obstétrique* Oct. 1894.)

HEREDITARY SYPHILIS; BIRTH OF A MONSTROSITY. By Dr. CAUBET.

At the meeting of the Société Obstétricale et Gynécologique of Paris, on July 12, 1894, the writer related the following interesting case. The patient, aged 28, born of a syphilitic mother, menstruated at 14 years; at 15, suffered from chloro-anemia. At about this time, a syphilitic gumma appeared over the malleola. Married at 18 to a healthy man. First pregnancy in 1885, resulting in a miscarriage at eight months; child dead. Second pregnancy in 1887; premature labor at eight months; macerated child. Third pregnancy in 1892; abortion at two months. The patient being affected with a mucopurulent metritis, the uterus was

curetted. A little later, a syphilitic gumma appeared on the nose; the treatment consisted in the exhibition of three grammes of iodide of potassium daily. A fourth pregnancy took place which, for the first time, went to term; no hydramnios. Spontaneous labor, resulting in a living child, but which presented the following malformations: complicated hare-lip; imperforation of the urethra; equinus varus club foot of right limb. (*Annales d'Obstétrique et Gynécologie*, Oct. 1894).

USTILAGO MAYDIS AS AN EXCITANT
FOR UTERINE CONTRACTIONS
DURING LABOR. By Dr. V. S.
GROMSDEFF.

The writer has obtained excellent results by the administration of the fluid extract of *ustilago maydis* in cases of primitive inertia of the uterus. Of six pregnant women, two vomited and could not retain the drug. A third was not influenced by the usual dose. In seven cases, however, its action was rapid and excellent in every way, by giving the patient from thirty to forty drops of the extract at one dose. The contractions appeared, twenty-five to thirty minutes, forty at the latest, after the drug had been ingested. These were like the physiological contractions, there being no convulsive or tetanic character about them. There was no contraction of the cervix, and the drug could be given without danger at no matter what time during labor, acting even better when dilatation was already obtained at the time of inertia. Delivery and the expulsion of the placenta were in no way delayed or prevented. The writer was not able to observe any bad results either to mother or child from the drug at the above mentioned doses. This drug which has been employed in Germany and especially America for the last twenty years, merits its

employment in obstetrical practice. It is far superior to quinine by its sureness of action and does not have the dangers of ergot. (*Vratch*, no. 17, 1894; review in *Annales de Gynécologie et d'Obstétrique*, Oct. 1894.)

TUBERCULOSIS OF THE OVARY AND
UTERUS. By DR. MAX MADLE-
NER.

Tuberculosis of the ovary is not frequently met with. If it is quite common to find small caseous foci in the ovary, it is rarer to discover large tuberculosis cysts. At the autopsy of a woman, dead from pulmonary tuberculosis, a cyst, the size of an adult head, was found. This cyst was movable, smooth, of tubercular nature, and, what was still more extraordinary, the same preparation presented at the uterus, starting at the fundus, a adenomatous polypus, measuring four centimetres in length, in which tubercles, giant cells, and tubercle bacilli were found. The surface of the polypus was smooth, with numerous cystic granulations under it. The surface of the uterus was smooth. Microscopical examination showed a glandular interstitial endometritis. Near the fundus, in the posterior wall, at the point of adhesion of the ovarian cyst to the uterus, a caseous focus the size of a bean was found, and three other small foci extended from this to the base of the polypus. The mucous membrane in this point was diseased, but everywhere else was normal. The polypus offered the following structure: The epithelium of the surface was almost entirely wanting; more deeply, a stroma, rich in cells, enclosing numerous bands of cylindrical epithelium cells, many of which had undergone cystic transformation. Near the centre of the polypus, these bands of epithelium cells disappeared, giving place to a proliferation of round cells, in the midst of which tubercles and

giant cells were discovered. Sections colored by Ziehl-Neelsen method, showed the bacilli of tuberculosis clearly. The tubercles could be traced up to the pedicle, near the

caseous foci in the fundus. The process was, consequently, infection starting from the cyst, gaining the uterine walls and invading the adenoma by the pedicle.

BOOK REVIEWS.

All Exchanges and Books for Review should be sent to DR. C. G. CUMSTON, 826 Beacon St., Boston.

L'HYSTERECTOMIE VAGINALE CONTRE LE CANCER DE L'UTERUS ET LES AUTRES AFFECTIONS NON CANCEREUSES. Par LE PROFESSEUR L. GUSTAVE RICHELOT. Paris, 1894. Octave Doin, Editeur. 8 Place de l'Odéon.

This volume is not intended by the distinguished author to be a classical treatise on its subject. It is simply based on his own work during five years, 1889-93. The reader is referred to the January, 1895, issue of the *Annals*, in which appeared an editorial based on part of this work, where he will find many of Prof. Richelot's ideas and statistics regarding the operation of vaginal hysterectomy. Throughout the volume, there is a clearness of style and honesty of the writer which is particularly striking, and the reader is convinced of his sound judgment and practical sense. The work treats of the following subjects: Vaginal Hysterectomy for Cancer; Vaginal Hysterectomy for Non-cancerous Diseases of the Uterus, Pelvic Suppurations, Hæmatosalpinx, Salpingo-ovarites, Complicated Retroversions, Minor Lesions, Pelvic Neuralgias, Secondary Vaginal Hysterectomies, Vaginal Hysterectomy for Fibroids and Prolapsus Uteri, Operative Technique in movable, adherent and fibromatous uteri. The work terminates with an analysis of 274

cases, presenting the most varied lesions, treated by vaginal hysterectomy. To all who are interested in the important subject of vaginal hysterectomy, this volume will be found most valuable as containing, the ideas and results of an honest and highly able surgeon.

CONTRIBUTION A L'ETUDE DE L'OZENE. Par DOCTEUR THEODORE J. SCHESTAKOW. Genève, 1894.

This scientific and well-written work, on a subject so interesting to all physicians, cannot fail to attract the merited attention it deserves. In its 162 pages we find treated: (1) The Medical History of Ozena; (2) Its Pathological Anatomy; (3) A most complete and interesting synopsis of twenty-eight cases observed by the author; (4) A comparative study of the cases; (5) Considerations on the Etiology of the Affection; (6) Symptomatology; (7) Concomitant Complications and Affections; (8) A Critical Exposition of the Pathological theories of Ozena; (9) Diagnosis, Prognosis and Treatment, the work ending with the conclusions of the author and a most extensive bibliographical index on the subject.

In closing, let it be stated, that much of the matter is the result of

extended personal researches, and that the book received the prize of the Faculté de Médecine de Genève for 1894.

DOSE-BOOK AND MANUAL OF PRESCRIPTION-WRITING. By E. Q. THORNTON, M. D., Ph.G., Demonstrator of Therapeutics, Jefferson Medical College, etc. Philadelphia, 1895. W. B. Saunders, publisher.

In presenting this volume to the profession, Dr. Thornton has filled a much needed want. The book opens with a most comprehensive chapter on weights and measures, explaining the metric system and giving an accurate comparison with the old weights and measures. Prescription-writing forms the second chapter and is thoroughly and practically dealt with. The remainder of this capital volume is taken up with the subjects of Official Preparations, Methods of Prescribing, Dosage, Methods of Administering Drugs, Official and Official Drugs and Preparations.

The volume is to be most highly recommended, as it covers its subjects in a manner that cannot be found in other books on therapeutics or materia medica and will be found most useful to the practitioner and student.

BLOOD SERUM THERAPY AND ANTITOXINS. By G. E. KRIEGER, M. D. Chicago, 1895. E. H. Colegrove & Co., publishers.

This little volume is a clear and practical exposition of its subject and well worth reading. It is divided into four chapters, treating the following subjects respectively: Blood-Serum Therapy; Toxins and Toxalbumins; Tetanus; Diphtheria. The volume is illustrated by some photographic reproductions of the micro-

ARTIFICIAL FEEDING AND FOOD DISORDERS OF INFANTS. By W. B. CHEADLE, M. A., M. D., Physician to St. Mary's Hospital. Third edition. London, 1894. Smith, Elder & Co., publishers.

The question of artificial feeding of children is so important and yet so imperfectly understood by many active practitioners, and the subject so slightly noticed in text-books and in the lecture-room, that the author was prompted to write this work, which is much needed. It is complete in every respect and is deserving of much praise.

The third edition has been revised throughout, and numerous additions, suggested by later experience, have been made, chiefly relating to the qualities of cows' milk and its preparations; the effect of various diluents upon it, the use of peptonized and pancreatized foods, and the influence of their prolonged use on the development of the scorbutic condition.

He says: "There is nothing more certain in pathology than that scurvy is produced absolutely and invariably by want of certain constituents of food. These are probably organic acids, such as citric, malic, tartaric, in combination with potash. Whatever their exact nature, however, they are known to be contained abundantly in fresh vegetable juices, in fresh raw meat and in milk; and as the privation of these elements produces the disease, so their free supply absolutely and quickly cures it. The effect of scorbutic diet is increased by want of light, of air, and defective hygiene; and, on the other hand, the curative influence of anti-scorbutic diet is aided by fresh air and sunlight.

"In no instance have I seen the disease arise in an infant at the breast, or when fed on an ample supply of good cow's milk. Oatmeal and water, bread and water, various pa-

tent farinaceous and desiccated foods, peptonized condensed milk, sterilized milk, pancreatized farinaceous food and milk, German sausage, bread and butter and tea, beef-tea, gravy and bread, in most cases with no milk at all, in a few with a very small amount only, are the dietaries on which I have seen scurvy develop, and, latterly most often on the peptonized and pancreatized foods now so much in vogue. And in these cases in children again, as with adults, the improvement which immediately follows the administration of anti-scorbutics is one of the most remarkable facts in the whole range of medicine, and a convincing proof of the condition being a true scurvy."

TRANSACTIONS OF THE COLORADO STATE MEDICAL SOCIETY, 1894.

This volume contains many valuable papers on various subjects pertaining to medicine, surgery, obstetrics and gynæcology. The enumeration of the titles would take too much space, as they are very numerous. The volume does much credit to our Colorado *confrères*, and we congratulate them on their success.

PRACTICE OF MEDICINE. By W. B. STEWART, A. M., M., Lecturer on Therapeutics in the Medico-Chirurgical College of Philadelphia, etc. E. B. Treat, publisher, New York, 1894.

The work has been prepared by the author with a view of presenting to the practitioner a brief synopsis of the practice of medicine. As a book of ready reference for the busy man, we think it most excellent. The etiology, symptomatology, pathology, diagnosis, prognosis and treatment of disease are concisely and clearly given. An excellent feature of the book is the large number of tables of

differential diagnosis inserted in the text. In every way the work is up to date and is to be highly recommended as a compendium of medicine.

LABORATORY GUIDE FOR THE BACTERIOLOGIST. By LANGDON FROTHINGHAM, M. D. V. Assistant in Bacteriology, Yale University. W. B. Saunders, publisher, Philadelphia, 1895.

This brochure has been written for use in laboratory work, and the methods enumerated are those which are most constantly employed. It is to avoid long search, except for details, that the author has concisely put together those methods that come into daily use and make it a work of ready reference. The technique of bacteriology, methods of staining, preparation of media and the imbedding of tissues for section cutting, form the contents of the little volume. It would have been better suited for the use of the medical practitioner interested in bacteriology had the author introduced the Klebs-Löffler bacillus, streptococci, staphylococci, etc. However, it will be found useful to those engaged in experimental or laboratory work, as much information is contained in its pages.

TEMPERATURE CHART. Prepared by D. T. LAINE, M. D. W. B. Saunders, publisher.

This chart is to be highly praised for its completeness and admirable arrangement. On the back is found a detailed description of the treatment of typhoid fever by Brand's method, translated from Dr. Glénard's excellent work.

ANNALS

—OF—

GYNÆCOLOGY AND PÆDIATRY.

DEPARTMENT OF PÆDIATRY.

Pneumonia in Children.

A CLINICAL LECTURE BY HAROLD WILLIAMS, M. D.,

*Clinical Professor of Diseases of Children in Tufts College Medical School,
Given at the Children's Room, Boston Dispensary, Jan. 21, 1895.*

REPORTED BY A. P. REED.

This little boy was brought here by his mother with the complaint that "his stomach was out of order." By his case, I wish to illustrate two things.

Upon examination of his throat you will see a thick, white membrane over both tonsils, the uvula and posterior pharyngeal wall. In other words he presents the clinical signs of diphtheria. What I wish to impress upon you by the illustration of the case is, first, the importance of examining the throat of every sick child who comes under your care. Nothing was said about this little boy's throat, and yet it presents the signs of extensive disease. This is a history which is not an unusual one.

Secondly, I wish to illustrate the method of taking cultures from sore throats. This box, which is furnished by the Board of Health con-

tains, as you see, two test tubes stoppered with cotton. In the bottom of each tube is the culture medium. In the middle compartment of the box is a platinum wire fitted with a metallic handle.

The platinum wire is heated in the flame of an alcohol lamp to insure its sterility, and is allowed to cool. Then care being taken that no other object is previously touched, it is drawn across each tonsil, and pushed beneath the false membrane. It is then drawn in parallel lines three times across the surface of the culture medium, care being taken that it does not touch the sides of the test tube, then it is again heated.

The tube is now stoppered and placed at one side, until it can be examined by an expert for the Klebs-Löffler Bacillus.

[Reports received next day showed

presence of the bacilli of diphtheria].

Some of you may have observed that the child coughed in my eyes as I was taking the culture. This may be a dangerous accident but need not occur if the examiner is careful to turn the child's head slightly to one side during examination of the throat.

In the event of such an accident, I simply bathe my eyes with clear water. Some prefer a disinfecting solution, but a disinfecting solution strong enough to do any good, is irritating to the eyes, and the irritated surface is a favorable soil for the growth of the germs.

In this context, I wish to say a word in regard to two children to whom I gave the anti-toxine last Friday. The first child died that night. Ten cubic centimeters were injected. The second child is alive and very much better. Fifteen centimeters were injected on Friday, ten centimeters on Saturday. Both cases were in the fifth day of the disease and apparently hopeless. I did not believe there was a chance of recovery in either case, nor did Dr. Disbrow in whose practice they occurred. The anti-toxine seemed of decided value in this second case.

[Cases were then shown of post-diphtheric, paralysis, varicella, heart disease, scabies and eczema, after which Dr. Williams spoke on

PNEUMONIA IN CHILDREN.

Several cases of pneumonia in children have already been shown to

the class, and the distinctive features of the different forms have been pointed out; but, from the questions asked me, I find some confusion still exists in the minds of many, and I shall consume the time to-day in an endeavor to make this subject of pneumonia in children clear to you all.

The chief element of confusion lies in the nomenclature of this group of diseases. Catarrhal pneumonia, lobar pneumonia, lobular pneumonia, capillary bronchitis, fibrinous pneumonia, "frank" pneumonia, and chronic pneumonia, are terms of frequent occurrence, and as they are not always used by different writers to denote the same condition, there is no wonder that confusion exists.

Pneumonia is an inflammation of the lungs, just as tonsilitis is an inflammation of the tonsil, and until its bacteriology is determined, classification is, at the best, a mere matter of convenience. For such a classification and description the profession is indebted to William P. Northrup, of New York, and F. Gordon Morrill, of Boston, who have done much to clear up this whole subject. Pneumonia in children is, then, an inflammation of the child lung, and exists in two forms, — broncho-pneumonia, and croupous pneumonia.

Pulmonary tuberculosis is also a pneumonia, but is a disease so distinct in itself, that it need not be so classified, and pneumonokoniosis, if it exists in children, is of so rare occurrence, that you need not burden your minds with its consideration in this context.

Both croupous and broncho pneu-

monia are probably due to bacterial origin. In the croupous form it is probably safe to say that there are a number of organisms capable of producing it: Fränkel's bacillus, Schow's bacillus, the *Aspergillus*, and the *Actinomyces* all resemble more or less Friedländer's pneumo-coccus and all seem capable of producing croupous pneumonia. But they are of no particular diagnostic value as they cannot always be found in the sputa and are of no value in children as there is no sputum in the majority of cases.

The microbes of broncho-pneumonia in children are, in their order of frequency, as follows: streptococcus, pneumococcus, the various pyogenous staphylococci, and the encapsulated bacillus of Friedländer. According to Mosny (Thesis, Paris, 1891), the pseudo-lobar types of the disease are due to the pneumococcus, and the lobar types to the streptococcus. C. G. Cumston, (Thesis, Geneva, 1893) has demonstrated that in the secondary broncho-pneumonia, so frequent during the acute and chronic intestinal catarrhs of infancy the bacterium coli communis may be the only organism found in the lungs, and that it alone has produced the secondary infection. Alfieri found in a case of fetid broncho-pneumonia the *staphylococci pyogenes citrius*, and a bacillus, that he identified with the *bacillus putridus splendens* found by Bernandi in two cases of fetid broncho-pneumonia. But while we cannot differentiate the two diseases, by bacteriological means, yet etiologically speaking, there is considerable difference between them.

Broncho-pneumonia occurs in children who have become debilitated by some severe previous illness, whooping cough, measles, diphtheria, scarlet fever, acute bronchitis and rachitis. It occurs in the poor, and those who live in crowded districts and under bad hygienic surroundings. But it also occurs among the better classes, though this is a subject upon which Dr. Morrill is sceptical, and especially in improperly hand-fed children. Though it may come on suddenly, it is usually insidious in its approach. Croupous pneumonia, on the contrary, comes on suddenly and in a condition of comparative health. Exposure to cold is undoubtedly a powerful factor in its causation.

Age is also an important consideration. Broncho pneumonia is comparatively common in children under five years of age, whereas *croupous pneumonia*, is comparatively rare. On the other hand, in children over five years, the converse is true. Pathologically the two diseases differ in many important respects, and in order to comprehend the pathological changes, it is necessary to bear in mind the anatomical peculiarities of the child's lung.

In the foetal stage he needs no lung; in the adult as much as he can get, and nature has provided the new born child, with a lung best adapted for its ever increasing needs and growth.

There is the large number of bronchial tubes to start with, each bronchial tube terminating in its bud-like dilatation. At birth, there are practically no alveoli—only these bud-like bronchical dilatations, projecting into

a loosely bound together connective tissue stroma.

From these buds, new buds project, forming eventually the alveoli. These air spaces are lined with a continuous layer of flat nucleated epithelium, and in the alveolar walls there ramify loosely confined blood-vessels, capable, by reason of their loose attachment, of easy distention, and consequent easy encroachment upon the cavity of the alveolus. Above all, also, we have that wonderful cell activity of infant growth.

The broncho-pneumonias ordinarily begin as a bronchitis, with congestion and swelling of the mucous lining, and an arrest of the function of the glands. Mucus is poured out, and accumulates, the congestion now diminishes, and the superficial epithelium becomes detached. Pus also makes its appearance, and sometimes also blood. Owing to the weak expulsive efforts of the child, this mixed inflammatory product accumulates, the process extends and we have involvement of the alveolus, as a simple extension of the process, until the connective tissue stroma is itself involved. This may come, in any portion of the lung, and to any extent and it is to the nature of this process, that the terms, capillary bronchitis, catarrhal pneumonia and lobular pneumonia, owe their origin.

To the plugging of the larger bronchial tubes with this secretion is due the collapse of lobules so common in broncho-pneumonia.

In croupous pneumonia, to quote Dr. Alfred Loomis, the "anatomical changes do not differ from the croupous pneumonia in adults." We have

a stage of engorgement, a stage of red hepatization, and a stage of gray hepatization, the pathological nature of which stages we have not time to consider in the hour allotted to us. This hepatization is followed by resolution or purulent infiltration as the case may be. The chief difference between croupous pneumonia in children and adults, lies in the fact, that in children, the apex is more often involved. Dr. Francis Minot, in his article on croupous pneumonia, in *Keating's Diseases of Children*, says that the disease is more common at the apex. In my own personal experience, this has also been the case, but Dr. Morrill, on the contrary, in an analysis of seventy-two cases at the children's hospital, found it more frequently at the base. It is in their clinical course, however, that the difference between these two forms becomes most apparent. Broncho-pneumonia, is essentially a disease of the extremes of life being most common in children under three. Croupous pneumonia is more common after three. Broncho-pneumonia attacks the weakly; croupous the strong. Broncho-pneumonia comes on slowly as a rule, and in the course of a pre-existing bronchitis, without premonitory symptoms. Croupous pneumonia is always preceded by premonitory symptoms, either a chill, or by headache, nausea, vomiting or convulsions. Sometimes all these symptoms are present. Fever, is a constant symptom of both diseases, but in broncho-pneumonia it is slower in its advance. In croupous pneumonia, it is swift. In broncho-pneumonia, it is seldom as high as in the croupous form, in

which it frequently reaches 105°, 106°, or even 107°. In broncho-pneumonia, in the beginning there is a more marked morning remission than in croupous, where the temperature seems to have come to stay until it suddenly falls to normal or below, by what is known as crisis. In croupous pneumonia, this sudden fall of temperature comes usually between the fifth and seventh day. It is the rule that the temperature in croupous pneumonia falls by crisis, but it is often the case, that it comes down more gradually by what is known as lysis. In broncho-pneumonia it rarely takes a sudden decline, and if it does, it is a symptom of evil augury, denoting the collapse of a portion of the diseased lung. In broncho-pneumonia the febrile movement is of much longer duration, seldom terminating in less than two or three weeks, and often lasting a much longer period. As the disease progresses, it is a matter of frequent occurrence, to find the morning temperature higher than the evening. During the febrile stage of croupous pneumonia herpes febrilis frequently appears upon the lip. Cough is a constant symptom of both diseases, varying in both, from the dry, short and worrying, to a paroxysmal cough resembling pertussis.

The respiration is greatly accelerated in both diseases, and the alæ of the nose dilate at each inspiration. There is also what Vogel denominates as the inverse system of breathing. In health the accent lies upon inspiration, — in pneumonia upon expiration. The pulse is also quickened, being twice as frequent as the respiration, whereas in health it is

three and a half or four times as frequent. This ratio, more or less exact, between pulse and respiration is a constant peculiarity of pneumonia, and in broncho-pneumonia, the respiration is, as a rule, more rapid than in croupous, the ratio sometimes even reaching one to one and a half, whereas, in croupous pneumonia the ratio is more frequently one to two and a half. In broncho-pneumonia we sometimes have the phenomenon known as the Cheyne-Stokes respiration. Pain is a symptom of little value, though more common in the croupous than in the bronchial form.

The physical signs, while well marked when the diseases are established, are not so distinctive in the beginning as one could wish.

In broncho-pneumonia, the disease following upon a bronchitis, we are more apt to get *râles* of all sorts and sizes, all over the chest, but the percussion resonance is not at first affected. But as the disease progresses, unless it should be located in some deep-lying portion of the lung, occasional areas of dulness are found in various portions of the chest, principally at the bases, and over these dull areas, can be detected sub-crepitant *râles*. Bronchial respiration over the consolidated spots is not easily demonstrated. In croupous pneumonia, on the other hand, diminished percussion resonance is more frequently found. The fine crepitant *râle* is heard along the edges of the consolidation, and bronchophony is often demonstrated.

We have, therefore, bi-lateral signs, especially marked at the base, in

broncho-pneumonia, whereas, the signs are confined to one side and usually the apex, in croupous pneumonia, — unless, indeed, the pneumonia is double, as sometimes happens, or unless the case is complicated by the existence of bronchitis. I have been accustomed to lay considerable stress upon the presence of the crepitant *râle* at the end of inspiration, as a diagnostic mark of croupous pneumonia, especially after the disease is well-established, — a sign which conveys to my mind the separation of the sticky walls of the alveoli by the incoming air.

Too much stress, however, must not be laid upon the value of the physical signs in the early stages of either disease, the severity of the illness, the high fever, rapid respiration — with dilatation of the alæ of the nose, and the inverse rhythm of breathing, with its sighing respiration — warning us that pneumonia is present, before the signs of its existence can be demonstrated by auscultation and percussion.

The prognosis of Pneumonia, depends upon the accuracy of the diagnosis — croupous pneumonia in children, is rarely a fatal disease.

It runs its course with varying severity, and generally ends in complete recovery.

Broncho-pneumonia is far more severe though it may of course exist in a milder type. Its severity depends upon the amount of lung tissue involved and upon the disease in the course of which it follows. It is most grave after whooping cough, next, after measles, or diphtheria; and its gravity seems to depend on

the celerity of its development — the more rapid the process the more speedy the resolution.

The treatment of these two affections varies somewhat, although the expectant plan is pursued in both. The child should occupy a large, well-ventilated, sunny room, with an open fire-place if possible, and a temperature not exceeding 65° Fahrenheit should be maintained. He should be kept as quiet as possible, preferably in bed. He should be sponged daily with tepid water, and his chest should be enveloped in a loose flannel or knitted shirt.

In broncho-pneumonia careful attention to nursing is of supreme importance. The child should be held at frequent intervals in the nurse's arms in order that his position may be varied. In her lap, he should lie upon his face, at times, and frequently be turned from side to side, for it must not be lost sight of that in the dorsal, recumbent position, the secretions in the bronchial tubes tend to gravitate to the affected portions of the lung. Relief is often afforded by the disengagement of steam in the sick room.

Food is a very important factor, and must be given to the child every two hours. Kumyss, peptonized milk, various prepared foods, wine jelly, serve to vary the milk diet. If the dyspnœa is extreme, and suffocation seems impending, ipecac may be given, as vomiting is frequently followed by the expulsion of more or less mucus. Ipecac in doses of a single grain is also a valuable remedy, as it causes a liquefaction of the mucus. A warm bath at the temper-

ature of 100° is also spoken of favorable as a remedy for dyspnœa, and the temperature of the water may gradually be lowered to 70° if the fever is very high.

The child is laid in a large towel, arranged like a hammock, and gradually lowered into the bath. In suspected collapse, mouth to mouth inflation of the child's lungs has been practiced, the child's nose being held between thumb and finger the œsophagus acting as a safety escape against the production of emphysema. In some cases a poultice of flaxseed may be used where pain and dyspnea exhaust the patient, but it should not be employed unless the necessity for it exists as upon a restless, tossing child, it is a wet and nasty appliance at the best. For pain and cough, Dover's powder in grain doses, more or less according to the age, is an invaluable remedy. After the establishment of the disease, alcohol is a remedy of the utmost value. It is surprising, the quantity which children will take, and it should be given with a lavish hand. The form is unimportant, but some of the sweet wines, for example, Tarragona or our American

ports or Canary are particularly grateful to children and supply food and stimulation at the same time. Rapidity and weakness of the heart are generally considered an indication for the employment of alcohol, but in judging cardiac weakness it must be born in mind that in the infant arterial tension is low. During convalescence, a change of air, cod liver oil, and iron are valuable remedies. In croupous pneumonia, less attention need be paid to the feeding, during the febrile stage. Nature empties the child's stomach in the beginning, and the child endeavors to keep it so, and worrying it about food, is of questionable utility. Cold lemonade, or the juice of an orange is often grateful to the little patient and may be permitted. Milk or animal broth should be given if the child will take them willingly. Pain and cough are combatted by Dover's powder, and the child is often made more comfortable by a simple cough mixture. At crisis, alcohol should be given, according to the exigencies of the case. It is also a remedy of great value during convalescence.

EDITORIAL.

The Contagion of Measles.

The different manners of contagion of measles should be studied with great care in order to carry out good prophylaxis to prevent the

spread of this disease. In a thesis upheld in 1882, Béclerè admitted that measles was not contagious after the period of eruption, that the conta-

gious matter only was diffused in the atmosphere in a limited way, that it did not remain in the rooms occupied by the patient and that it is rarely transported by people or objects. According to Grancher the contagious agent of measles, if it is transmitted by the atmosphere, is not very diffusible, for if a case is by mistake placed in a general ward filled with children, the greater number of children susceptible to contracting the disease, escape. Contagion of measles is especially noted in small epidemics which rapidly subside spontaneously and only reappear after a new case has entered the ward. If the contagion of measles is affected by the air, this contagion is not limited to the neighborhood of the patient, it does not exist but within a few yards around a patient. Measles is surely carried long distances by the hands and clothes of a person who has been in contact with a case. All cases of contagion which occur in wards situated at different distances from the measles wards can be easily explained in this way. The reality of indirect contagion is demonstrated by a certain number of facts. One of the clearest is that mentioned by Killer. A man, coming from a village where measles was raging and having himself some children sick with the disease, came to see a friend in a neighboring hamlet which was absolutely free from the malady. While the men were talking, a child aged nine months remained in the room and a few days later was taken with a serious form of measles. Fiessinger has observed cases

of contagion produced by the intermediary of a piece of cotton, which four months previously had been applied over the chest of a person suffering from the disease. As had been said, Grancher thought that the transportation of the microbe by a person who had been in contact with a case, was the most important manner in the propagation of measles in children's hospitals. Hutinel and Deschamps have also observed that patients in the beds near the measles cases were not taken with the disease, while those occupying beds quite a distance off came down with the malady. B. T. Martin however, believes that in cases of this kind, contagion may have taken place through the air and he advises to carefully pay attention as to the direction of the movement of the air around a case of the disease in question and also to the influence of cleaning the wards with brooms in the spread of the disease.

A fact related by Mercier, occurring in 1890 during an epidemic in the barracks at Châteauroux, also affirms the possibility of contagion by the air. This epidemic ran its course in four appearances. On January 14, a case coming from outside was diagnosed in building A. First appearance from January 25 to 29, ten cases, eight of which were in building A, and seven belonging to the same company as the first case. Second appearance from February 8 to 12, eleven cases, six of whom were in building A and five in building C. Third appearance from February 21 to 25, five cases in building C and three in building B. Fourth appearance on March 8, two cases in building B, in other words, in all twenty-nine cases, eighteen of whom were

stricken by the germs developed by their comrades, having one introducer and ten contaminated by him (first appearance). Now, Dr. Mercier insists on this point, of the eighteen cases of the second, third and fourth appearances, there were six sleeping by the windows, three were only separated from the window by the bed occupied by a man having had measles, two were separated from the window by only two beds, and five slept near the doors opening into the room; the last two came from a room in which formerly there had been a case of the disease. Viry and Mercier had already remarked in former epidemics, that men sleeping near windows were frequently attacked by measles; consequently our confrères conclude that contagious matter of the disease which is found in the dried expectoration and nasal secretions is disseminated in the dust by currents of air which enter by the windows, etc., of rooms. While the rooms which were brushed up and at least a part of the dust thrown out by the windows, the hospital, in which eleven cases remained during the days that the measles was at its height of contagiousness, did not furnish one case of contagion. This is because no one walked about the room and consequently there was little dust when it was swept. Sevestre, on the other hand, admits that there is a dangerous zone about patients which is denied by Grancher. Importance must be given to the *quantity* of contagious matter, in the production of the contagion. Barbier insists on the fact that ward hands, who enter a service of measles often take the disease, even if they have had it when children. Here then are two manners of contagion of measles, one indirect, the other, direct. There may exist an intra-uterine contagion also, the child being born with a most characteristic eruption as mentioned by Blanche, Guersant and

Gautier. The contagiousness of the disease is especially marked from the début of its invasion, and this fact is to-day admitted by the profession generally. According to Bard, the maximum of contagiousness is during the second day previous to the eruption, and after the appearance of the latter, the disease is no longer contagious. It is however probable that the disease is contagious before this, but is very attenuated. In any case all danger is over, once the eruption has appeared. Dr. Guinon, nevertheless, mentions a case of contagion, nine, and Dr. Darolles, one, eleven days after the appearance of the eruption. It may be deducted from what has been said, that the prophylaxis of measles is most difficult. Generally the little patient is left with the other children, as the symptoms are not very serious, and as this is just the time of the maximum of contagion, the spread of the disease among those who are not already in a condition of immunity is readily understood.

As Bard says, when a child, in the preëruptive period is placed in the midst of healthy children, nearly all those who are susceptible are contaminated by him. According to the same writer, the broncho-pneumonia of measles can be transmitted at the same time as the disease itself, and thus forms a mixed infection. Bard also believes that the germs of the disease are of such short duration that persistent infection of the rooms and furniture occupied by the patient, is not to be feared; consequently disinfection at the end of the malady is not necessary. But on this point we agree with Barbier, who considers it a great mistake to neglect disinfection. Although Sevestre believes that the duration of the vitality of the germ, outside of the living individual, is not more than two or three hours, Grancher's observations show that it may per-

sist for two or three days. Still more, a germ that loses its virulence is not necessarily a dead one, and it results, from certain facts, that rooms in which cases of the disease have been confined, may be dangerous a year afterwards.

Among the consequences of the increase of instruction, is the increase of cases of contagious diseases in children. Dr. C. Munro has demonstrated that in England, the proportion of deaths from measles was 214 per million of inhabitants from 1871 to 1880, while it increased to 927 from 1881 to 1890. According to Munro, this increase is due to the greater frequency of attendance of children at school; in English cities, where the agglomeration in schools is less, the frequency of measles is not so great. The same authority has also noted, that in a certain number of cities epidemics of the disease appear

every two years, which is due, according to Willingsby, to the fact that children remain usually two years in the primary schools, after which time they pass into classes of children older and often no longer susceptible, having already had the disease. The contagion of measles is found in the blood, the secretions of the nose and eye and also the saliva. Some time ago, Munro and Loolke inoculated the saliva and secretions from the eyes of patients with measles, and produced the disease six days after the inoculation. In 1860, Mayr produced the disease by placing the nasal secretions of measles patients on the nasal mucous membrane of two healthy children. The first symptoms of the disease appeared on the ninth day after. Inoculation of the products of desquamation have always given a negative result.

New York Academy of Medicine. Meeting of January 10th, 1895.
Section on Pediatrics.

Dr. Joseph E. Winters, Chairman.

Dr. HENRY KOPLIK read a paper entitled

THE MILK SUPPLY OF NEW YORK AND
ITS AVAILABILITY FOR INFANT
FEEDING.

There seems to have been for some time the belief that the milk supply of New York city is of inferior quality, and unfit for infant feeding. To ascertain, if possible, the real facts concerning so important a question the systematic examination of the milk supply of the city was undertaken by the author. These investigations extended from March to October, 1894. Milk from many localities was obtained, especially from the poorer

stores in the tenement regions. This milk was surprisingly uniform in the quantity of cream, twelve per cent to fourteen per cent. The specific gravity was also quite constant. The milk was therefore the average mixed milk.

In looking for tests it was concluded that no one test would fulfil so many requirements as the chemical. The test chosen was Soxhlet's method modified by Plauth. The chemical is preferable to the bacteriological test owing to its greater simplicity.

The rate of increase in the acidity of milk is the criterion by which it must be judged. Soxhlet showed that fresh milk for some time after milking does not increase in acidity. This interim of stationary acidity is

known as the incubation period of the milk.

The following table is from Plauth :

MILK IN THERMOSTAT AT 25 C.

Hour.	Acidity.	Bacteria.
	90	42,092
1	90	53,056
5	96	606,240
8	104	8,186,200
24	312	20,275,200

This shows an appreciable increase at the end of the fifth hour, the bacteria count being somewhat over half a million; but when the incubation period is well over the bacteria number eight millions. The acidity increases in about the same proportion. The length of the incubation period depends upon the temperature at which it is kept, and the cleanliness with which it is handled. Milk kept at a temperature of 10° C. will keep ten hours longer than that kept at 20°. Only during the first two-thirds of the incubation period is milk suitable for infant feeding.

A series of tests made in the country, shows the average length of the incubation period without special precautions as to cleanliness. In a second series of observations the hands of the milkers and the udders of the cows were thoroughly washed with warm boiled water. This extra care lengthened the incubation period a number of hours. Other experiments show the incubation period for city milk. In winter weather city milk remains within the incubation period for twenty-four hours, coagulation taking place in seventy-two hours. A very interesting series of these experiments show the incubation period during hot weather. In not one case was milk purchased early in the morning found to be unfit for infant feeding because of acidity. The shortest limit to the incubation period was two hours after purchase. The incubation period was occasionally lengthened nine hours on cool days.

As the result of other examinations the following conclusions are drawn:—

(a.) Fresh clean milk remains unchanged in acidity for at least five hours of thermostat temperature. (b.) Fresh milk not clean remains unchanged for four hours but in five hours shows an initial increase in acidity. (c.) Moderately clean milk shows a beginning of rise in acidity in four and one-half hours. Milk beyond the incubation stage shows marked change in acidity in one hour. These tests prove that milk after its arrival in New York is within the incubation stage. Milk from the better portions of the city can lay but little claim to superiority over that from poorer.

Milk procured early in the morning is invariably good. That procured in the afternoon in small shops is frequently at the end of the incubation period. New York city milk is, therefore, both winter and summer, still within the incubation period on its arrival in the city. The incubation period is twenty-four hours in winter, thirteen to seventeen hours on a cool day, and five hours on a hot summer day after the milk arrives in the city.

Having determined the status of milk, on its arrival in the city, the question arises what steps should be taken to render it fit for infant use during the day. In the average tenement family milk is procured in installments several times during the day. It is estimated that but one family in five can afford ice. It is first important, therefore, to obtain sufficient milk before eight o'clock in the morning to last for the day. Three methods recently advocated for the preservation of milk were tested by the authors — filtration, Pasteurizing and sterilizing.

Numerous samples were filtered according to the method of Dr. Seibert. Strange to say the acidity of this milk in every case was greater

after six hours than that of unfiltered milk. The experiments indicated a negative effect of filtration in delaying the souring of milk.

Tests were made daily for twenty days upon a great variety of milk to determine the effect of Pasteurizing. The Freeman apparatus was used, which is extremely accurate, as the temperature of the milk was found to be almost invariably 170° F. It was found that in a warm summer day Pasteurized milk has a fairly stable acidity for ten or twelve hours. The acidity then rises slowly and twenty-four hours after being Pasteurized the milk is curdled. In cold weather the milk is found to stand twenty-four hours or longer before coagulating. The growth of the bacterium lactis is retarded for about five or six hours by the process. Pasteurization is not therefore a sufficient safeguard in hot weather. The result of sterilizing milk at a temperature of about 90° C. for forty minutes were carefully noted, using the process employed by Dr. Koplik in his laboratory connected with his large dispensary practice. Below this temperature milk could not be considered absolutely stationary in acidity longer than twenty-four hours. The conclusion reached was that for every-day practical purposes sterilizing at a low temperature, 80° to 90° C., meets all requirements. Although the milk is not rendered absolutely sterile, no perceptible change takes place for at least two days.

The facts enumerated show that milk delivered by the New York retail stores if procured early in the morning is a wholesome food for babies. In considering an infant food, it is necessary to secure one which is accessible to the poor as well as to the rich. It is necessary that milk to be so used should remain absolutely safe for twenty-four hours after it is obtained by the family, even when exposed to the hot

temperatures of hot summer weather. The expense is also an important feature. The authors are convinced both from chemical experiments and clinical experience, that ordinary city milk procured early in the morning and sterilized at 90° C. fulfills these requirements.

Dr. A. SEIBERT in opening the discussion said that milk for infant food should be clean, but that cleanliness was relative or absolute. Absolute cleanliness or freedom from germs could not be expected, but a relatively clean milk, that is one containing very little dirt and germs was necessary for infant feeding. It is seen from Dr. Koplik's experiments that simple washing of hands and udders retarded souring materially. This resulted from the removal of germs. He did not understand why filtered milk could sour more quickly than unfiltered milk unless the cotton used was unclean. Germs might have in some way been added to the milk. His own very elaborate experiments showed that the number of germs was enormously decreased. He was glad to know that Dr. Koplik, who had favored Pasteurization two years ago, was coming back to the belief that sterilized milk was the only safe food for infants during hot weather. It has always been his belief that the luke warm process was not safe.

Dr. R. G. FREEMAN said that all bacteria did not produce an acid reaction. The bacillus of typhoid fever did not produce such reaction neither did the germs of the other infectious diseases. At the Straus laboratories where enormous quantities of Pasteurized milk had been furnished to the poor, souring was only found to occur in but one instance. He believed Pasteurized milk to be safe for use during twenty-four hours.

Dr. E. F. BRUSH said that it would be wrong to leave the impression that all the milk obtained in the city without regard to its source was

equally good. No effort in the present investigation had been made to ascertain the source of the milk. The presence or absence of acidity was but a single phase in a very complex subject. Sickness was sometimes caused in a child who had taken perfectly fresh milk from a diseased or nervous animal. He believed the statements in the paper to be too positive and sweeping. He thought the reason for the early souring of the filtered milk was easily explained. He once attempted to cool fresh milk by running it over coils filled with ice water and found that while ordinary milk would keep fourteen hours, this cooled milk soured in four hours. This was due not to germs, but to oxidization, which cause is also believed to produce an acid. The filtering would readily bring the milk in contact with the air and cause oxidization. It is well known that a thunder storm will suddenly cause milk to sour. While in charge of the New York infant asylum he repeatedly had to contend with this mishap to the milk. He found that milk soured by a thunder storm if curdled still farther by heat and broken up so that the caseine appeared in small masses could be fed to the babies without producing the slightest disturbance.

Dr. J. LEWIS SMITH asked if Pasteurizing was not adequate for the destruction of pathogenic germs. He had known tyrotoxin to be developed in country milk in six hours.

Dr. W. L. CARR said that one of the most important results of the paper was to show that we have in sterilized milk a safe and practical infant food.

Dr. E. LEWIS said that the filter used had been that of Dr. Seibert, and the cotton had been that furnished with the filter and was supposed to be perfectly sterile.

Dr. KOPLIK said that he was convinced by his investigations that milk fit for infant feeding could be obtained in New York city. If it was purchased early in the day and properly prepared, it could be kept without difficulty. It is true that Pasteurization kills typhoid and all other pathological germs. For the purpose of preventing these diseases, milk should always be Pasteurized at least. Raw milk ought never to be given to young children. Pasteurizing is not sufficient, however, to kill the bacterium lactis, and this germ is the cause of the great destruction of life in large cities during the warm summer months.

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Note on the Pathology and Treatment of Osteomalacia, with Report of a Case Cured by Bilateral Oöphorectomy.*

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OSTEOMALACIA is a rare disease and is essentially localized in certain countries. As its clinical and pathological symptoms are so absolutely characteristic it is most justifiable to make it a distinct morbid entity. In this note I desire only to report a case of this affection, the only one that has ever come under my observation, and will then make a few remarks regarding the modern pathology and treatment.

CASE.—Mrs. K., aged 39, of Geneva. Menstruated at 16, regularly every month for eight days, blood was considerable in quantity, no pain, no leucorrhœa. Married at 20, has had seven children, the last one about three years before coming to the

hospital. Labors were normal and all the children were brought up on the breast. The patient had always been in good health, and although poor had been well nourished. Eight years previously she occupied a suite of rooms that were so damp that in the morning the bed in which she slept was moist. In was in this suite, which the family inhabited for two years, that the present affection first appeared. The patient commenced by feeling pains in both legs, which rendered walking difficult. She was treated without result for chronic rheumatism. About two months after the beginning of these pains the patient became pregnant for the fifth time; her legs swelled a little, the pains in the legs increased, and towards the end of pregnancy she

*Paper read before the Section of Gynæcology and Obstetrics of the Suffolk District Society, Feb. 27, 1895.

could hardly move about, she did not however keep her bed. After the labor (Nov. 4, 1884), which was normal, the pains diminished without entirely disappearing. Walking became better but difficult. This condition did not change until the commencement of her sixth pregnancy, when the pains became very intense in the legs, pelvis and kidneys. The legs swelled slightly and the last three months of pregnancy were almost entirely passed in bed. After a normal labor (July 22, 1886), the patient was a little better, but walking was more difficult than after the fifth labor, the pains being now steady. Another pregnancy led to a seventh normal labor on June 7, 1888. The patient again suffered, but more severely, from the same symptoms as in the preceeding labors, but the pains which disappeared almost entirely after the other labors this time persisted, preventing the patient from sleeping. For about a year the patient experienced, when in bed, a most disagreeable sensation of heat in the legs. The six months previous to her entering the hospital the patient remained almost constantly in bed, and when she walked it was with great difficulty and only with the aid of another person or a chair. Four months before entering the hospital her menses became irregular and excessive without any apparent cause, and two months before she had a menorrhagia of sufficient gravity to call in a physician. Another of less intensity occurred six weeks latter. The bowels were regular, the appetite good, but sleep was poor on account of the pains and

sensation of heat in the legs. The patient was often awakened by sudden and violent muscular contractions in the legs. While awake, these involuntary contractions did not occur. The patient entered the Butini Hospital in the service of Dr. E. Kummer on March 29, 1892. The patient is small, thin and sickly looking, the muscles are soft, pulse small, regular, 80 to 90 beats. Systolic bruit, nothing abnormal in the lungs. The abdomen is very prominent on account of a considerable lumbar kyphosis. The abdomen is short because the pelvis and thorax are near together. The liver descends a finger's breadth below the ribs. Above and to the left of the symphysis pubis a hard, round lump is felt, which might be the uterus. Looking at the patient from behind a marked kyphosis is seen, but on close examination this deformity is not so much due to the vertebral column but to a deviation of the sacrum, which appears to be thrown back, while the lumbar vertebral column presents a posterior concavity. The sacrum is as if compressed from above downwards; its point projects forward rather than downwards. The iliac crests are projecting, forming a deep hollow, and by introducing the finger the twelfth rib is found so profoundly engaged in the iliac fossa that it is impossible so penetrate between. The trochanters are normal. The lower extremities are in a slight degree of inward rotation and a slight flexion exists at the knees.

The iliac crests are as if compressed from in front backwards, and in the middle present a convexity, produc-

ing a marked lateral projection. The horizontal branch of the os pubis looks as if pushed towards the middle line, so that the symphysis looks like a projecting beak.

Distance between iliac spines . . .	18½ cm.
“ “ “ crests . . .	26 “
“ “ “ great trochanters . . .	24½ “
Bandelocque's diameter . . .	16½ “
Antero-posterior diameter . . .	7 “

Per vaginam, the ascending branches of the pubes are so near together that at their upper part it is impossible to insert the index finger between them. The tuberosities of the ischium only distant two finger's breath. The coccyx is displaced forward, and reaches a transverse line, uniting the middle of the tuberosities of the ischium. The sacrum presents a deep excavation, and higher up the very projecting promontory is found, allowing hardly the introduction of the finger between it and the pubes. Here the cervix is found, the greater part of which and the entire body of the uterus are above the promontory, out of reach of the exploring finger. The movements of the articulation of the hip joint are as follows: Flexion at 90° produces great pain; abduction is very limited; the knees can only be separated about 9 centimetres; outward rotation is about 10° to 15°; inward rotation on the right none, on the left 5°. The other joint movements are free. Rotation of the shoulders is limited, especially outward. Elbows and hands are normal. The patient experienced pain when she opened her mouth widely, but nothing abnormal was found in the temporo-maxillary artic-

ulation. The cervical region is movable but the dorsal region is limited, and no motion exists in the lumbar region of the vertebral column. The bones of the head and thorax are normal. The pelvis and sides of the thorax are tender on pressure. Height of patient 141½ centimetres.

On account of the absolute uselessness of medical treatment, Dr. Kummer decided to perform Fehling's operation, which was done on April 9, 1892. Median incision, extending from the umbilicus to the symphysis. The intestines were held back by a large pad of gauze, and the uterus easily seized and drawn out with the adnexa. The right ovary and pavilion was tied off with silk and cut away. The peritoneum was united above the surface of section by a single suture. Left ovary removed in a like manner. Three planes of sutures for the abdominal incision.

Pathological examination of the specimens showed that both the ovaries were of medium size and normal shape. The vascular supply appeared normal. In both ovaries several small cysts were found, the largest of which was the size of a small filbert, filled with a light red liquid. In the left ovary a corpus luteum was found, the last menses having taken place a few days before the operation.

The patient rapidly recovered from the operation without any temperature. The following day the pains in the pelvis were less, and only those in the legs remained, but far less intensity. The sensation of heat in the legs has diminished although not entirely absent. Walking is far bet-

ter. The patient was up three weeks after the operation and was able to walk in the hospital yard without a cane, but with difficulty however, and quickly became tired. This is not astonishing, for examination showed that the skeleton was just as deformed as before the operation; the bones only are not painful on pressure. The general condition is far better, appetite is good and the patient has gained in weight.

In order to discover the effect of oöphorectomy on the organic changes, Dr. Paul Binet made quantitative analysis of the patient's urine before and after the operation.

Before Operation.—Urine acid; color No. 3 of Vogel's scale; clear; specific gravity, 1015; no albumen or sugar in pathological quantity. Phosphoric acid, 0.84 gr. per 1000; calcium, 0.05 gr. per 1000.

After Operation.—Slightly acid; color, 2.5; no sugar nor albumen. Phosphoric acid, 0.69 gr. per 1000; calcium, 0.05 gr. per 1000.

Pathological Anatomy and Physiology.—The characteristic lesion of the affection is the decalcification of the normal bone tissue and its consecutive destruction, while rachitism is produced by the absence of calcification of the elements of ossification. In both diseases, there is a change in the marrow; red osteomyelitis in the beginning, while in the advanced stage it is a yellow osteomyelitis. Chemical analysis of the bones in osteomalacia shows a diminution of the phosphate and carbonate of calcium. The studies of Berzelius and Otto Weber show that the phosphate of calcium may be

only from 20 to 2 per cent., while in the normal condition this salt is found in the proportion of from 51 to 83 per cent. According to Mörs and Muck, calcium decreases more than phosphoric acid. Carbonate of calcium, which normally is 12 per cent., decreases to 1, 2, 3, 4 and 5 per cent. This shows that the calcium salts are four or five times less in quantity than in the normal bone. According to Bouchard, the decalcification of the bone plates produces secondarily changes in the physical and chemical properties of the ossein. The fundamental substance of the bone plates become clear and hyaline by decalcification, and cannot be transformed into gelatine. Some writers have tried to explain decalcification of the bones by the presence of an acid which dissolves and eliminates the phosphate of calcium. In reality the chemical reaction of the bones is modified; it is neutral and even acid, and lactic acid has been found in the bones in osteomalacia by Schmidt, Weber, Drivon and others. Now what is the manner of production of lactic acid in the bones? For Bouchard, the living organism is constantly making acids, but destroys them under normal conditions. Under the influence of certain morbid conditions, oxydation of organic acids is not so active, or at least these acids accumulate, and pregnancy appears to be one of these conditions. Another theory is the influence of the nervous system, which is astoundingly upheld by the results of castration. For Fehling, osteomalacia in women is produced by an irritation of the vasodilator nerves of the bones, coming

from the ovaries, thus causing hyperemia and resorption of the bony tissue; consequently this disease seen in this light is a trophoneurosis and the theory is based on the following facts:

(1) Marked increase of the malady coincides with each menstrual epoch: (2) the extremely rapid diminution of pains in the diseased parts after ablation of the ovaries; those of the ribs and sternum are lessened usually three days before those of the pelvis; (3) the great richness in arteries and veins in the extirpated adnexa, with dilatation of these vessels, as in pregnancy, showing that this is the essential cause of the disease; (4) the fecundity of osteomalacia women is very considerable, as the following table will show:

According to Fehling.	. . .	5.4
" " Eisenhart	. . .	6.4
" " Baumann	. . .	6.8
" " Rosenträger	. . .	8.2

The mean fecundity in Germany is 3.9.

This great fruitfulness clearly demonstrates the hyperactivity of the ovarian functions, and even when the disease has declared itself, the frequency of pregnancy is still very remarkable. From what has been said I think that the nature of the morbid process resides in a pathological hyperactivity of the functions of the ovaries. Kehrner attributes the disease to an infectious agent, an osteolytic organism, because the disease, like leprosy, etc., appears to be endemic and localized in certain regions. The urinalysis does not throw much light on the pathology of the disease,

and although Lehman, Mommsen and others have found lactic acid present (in the case reported there was none) still nothing certain can be deduced. As to the alkalinity of the blood, put forward by von Jaksch, it may be said that there is nothing absolute in this fact, as in many cases the blood was normal.

Treatment.—I shall pass in silence the medical treatment of osteomalacia, having had no experience in the matter, and will simply speak of oöphorectomy. This operation for the cure of osteomalacia dates back to the Congress at Berlin in 1890, where Fehling reported nine cases cured by castration. The patients were from twenty-eight to fifty years of age; they were all multiparæ and the disease was of long standing; in one of them about thirteen years. Only one died from intestinal strangulation; the other eight recovered rapidly. Fehling's cases were soon added to by Truzzi, Menzinger, Thorn, Hofmeier, and a host of others. When the patient is pregnant, von Velits prefers the Cæsarian operation, completing it by ablation of the ovaries, rather than Porro's, which is more dangerous. In the case of a pregnant woman, aged 41, having a grave osteomalacia, Rasch induced premature labor, delivering twins. As no amelioration in the severe pains was noticed, he performed oöphorectomy with immediate relief and recovery of his patient.

After a careful research in the literature of the subject, an abstract of which would fill a small volume, I would venture the following conclusions:

(1.) If the patient is pregnant, her health in fair condition, allow the pregnancy to go to term. If the pelvis is too much contracted for normal delivery at term, perform

Cæsarian section and ablation of both ovaries.

(2.) In a non-pregnant subject, perform bilateral oophorectomy.

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Hysterectomy for Periuterine Suppuration.

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THE latest departure in gynecological surgery, engaging the serious consideration of those engaged in work along this line, is that of determining whether it is not better surgery to remove the uterus per vaginam, when suppurating tubes are supposed to exist, and some would go even farther, and advise such procedure in certain inflammatory conditions, unattended by purulent collections, but implying extensive denuded surfaces in case of removal by cœliotomy, necessitating drainage and exposure to the not infrequent complications of such cases. Péan is credited with having brought this idea to the notice of the profession some years since, though it has excited little interest until quite recently, and that interest has been enlivened by recurring experiences arising in that particular class of cases for which the method is especially recommended by its advocates.

As Missouri is rapidly establishing its position among the leading States of the Union as a progressive medical and surgical State, it seems fitting that we should, together, consider any innovations proposed, and decide,

as far as may be, what merits, if any such propositions may possess, and then, as in other matters, be governed accordingly. Certain it is, everyone who has done any considerable number of sections must have met with cases of purulent accumulations in the tubes that have given serious trouble, if they may not have been proven fatal, and have suggested to him the feasibility of removal of the uterus, thus ridding the pelvis of germs that may have given trouble even after a clean and apparently successful operation. Again, we have felt much the same in cases where dense adhesions have been broken up, leaving large denuded surfaces requiring extensive drainage. We may have been successful in employing the usual methods in the large per cent. of cases, but rare will be the man who will not report fistulæ, herniæ and delayed convalescence, if not sepsis or other suppurative conditions, intestinal adhesions, etc. All these complications have suggested the operation now under discussion, as a remedy. It would seem that such a procedure could not

be applied to every case in which it might be indicated, as it would be too much shock to the weakened subject, but again, we must recognize that, if the shock of hysterectomy is too much or a dangerous factor in attempting to cure the patient, a cœliotomy must be equally, if not more dangerous, as it involves to a much greater extent the peritonæum and contained viscera, making shock quite as likely as when the uterus is removed *per vaginam*, if done within a reasonable length of time.

It is that class of cases which suggest this procedure, that demand for the most favorable prognosis, the most skillful and rapid operating. Much depends upon the minimum of time, whichever method is employed, hence it devolves upon one to perfect his technique and provide himself with such instruments as shall facilitate the operation elected. Péan's operation proper consists in the removal by sections, or by morcellment, involving an urgent need for such instruments as he recommends for the purpose. Others do not find it necessary to divide the uterus in sections, but remove it as a whole.

The questions for us to solve are: Can more lives be saved by this method? Is it more safe? Are the patients as perfectly cured as by cœliotomy and drainage? If it seems to be a matter of simple choice of methods, which leave the patient in the best condition physically and mentally? When it is proposed to substitute vaginal-hysterectomy for cœliotomy, in all cases demanding the removal of both appendages, whether suppurative or not, I must,

from personal experience, dissent—and I would also restrict the procedure to very narrow limits, even in cases of pyosalpinx. At the same time I am willing to concede that there are cases in which the adhesions are very dense and extensive, where, possibly, to effect more perfect drainage through the removal of the uterus, it might prove an advantage; leaving the adhesions, nature's barrier, undisturbed. In these cases we must, it appears to me, choose between vaginal puncture or incision and drainage and vaginal hysterectomy, as by the hysterectomy the tubes in these aggravated typical cases must be left as a sequestrum for possible subsequent trouble, in not a few cases, or left as discharging sinuses with tardy closure. Suppurative salpingitis can, in the majority of cases, be successfully treated by cœliotomy and drainage, or without drainage in many cases, according to the fancies of the operator, supposing of course, that his technique is as nearly perfect as present understanding orders.

Personally such cases have been most successfully treated by preceding them (and all cases of cœliotomy) by a thorough curetting and a complete ablation of a suppurative tube from the cornu of the uterus, stitching the cornu over and over, after ligating the vessels, independent of the tube. Such cases have generally made satisfactory recoveries with or without drainage and without the loss of the uterus, although now a useless organ. By removing the uterus we may have adhesions of descending intestines or other complications, a weakened vault and a shortened vagina, things not to

be lightly considered. The objection offered to cœliotomy where the drainage tube is used, as causing hernia, I do not think well taken, provided a proper one is used, viz.: one of small diameter and not too long retained, and the aperture through which it passes provided with a provisional suture to be tightened when the drain is removed. Clean work does not often demand drainage, and in those cases where it is required, I am not sure but a better and more perfect result would be obtained by effecting an opening through the floor of the pelvis, posterior to the uterus, thus interfering little with the intestines, and thereby possibly rendering fecal fistulæ, infection, etc., of less frequent occurrence. The vagina should be made aseptic prior to a cœliotomy, thus obviating any special liability of infection of the peritoneal cavity, in case it should become necessary to open into it.

By a cœliotomy we are enabled to examine and ascertain the exact condition of the tubes and ovaries and verify or disprove our diagnosis. It may be argued that diagnosis should be made prior to the operation granted, but who has not found upon opening the abdomen quite a different state of things from that expected? Nor is it any serious reflection; it occurs with those of ripe and abundant experience, as I can attest.

By a vaginal hysterectomy it is impossible, until the work is well-nigh completed, to verify our expectations, and though we effect a drain for the tubes, there may remain higher up an ovarian abscess or other pocket of

pus, which may constitute the cause of the septic condition of the suffering, and even be the only element of danger existing in a given case. In electing which operation is to be done, we must not neglect to consider the elements of immediate danger to the patient. In hysterectomy we have to deal with important blood vessels, the improper securing of any one of which, a more than accidental possibility, would cause quick death from shock or hæmorrhage. The average time of doing a vaginal hysterectomy attended with adhesions is longer than a cœliotomy; again, the ureters are in such very close proximity to the lines of division, and are often distorted and drawn from their normal location, making injury to them or the bladder of not infrequent occurrence. Again some cases of vaginal hysterectomy, simple and straightforward as they may be, suffer material shock from the clamping or in the ligating of the broad ligaments.

Again, in hysterectomy no small number of lymph channels are exposed to the purulent discharges to be disposed of, so that septic infection would be worthy of serious consideration, especially in a case already septic. On the other hand in cœliotomy we manipulate more or less the sensitive serous surface of the peritoneal cavity and its contained viscera, and expose them to the deleterious effect of foreign substances, air, contamination of escaping pus, etc., with resulting adhesions of intestines to each other and to points suffering from the slightest traumatism. Adhesions, in my judgment, are the bane and

only valid objection to be considered in *cœliotomy*.

Many cases may never suffer to such extent as to require a section for absolutely dangerous symptoms, but disturbances as a result of adhesions are legion.

It might be argued that they do not occur where perfect asepsis obtains. To such assertion I am now ready to assent. That they are less, now that we use only aseptic measures, instead of antiseptic as formerly, is more than likely, but all cases subjected to operation suffer in many places, even where no visible trauma exists from a loss of endothelium, and just there may form an adhesion of greater or less extent, with mild or serious manifestations resulting.

Looking at the abdominal side of the question, who has not experienced great anxiety, if not actually lost cases of *cœliotomy*, as a result of disturbing old, dense adhesions of intestines to appendages requiring removal?

If removal of the uterus per *vaginam* will obviate these unpleasant results, than a very valuable addition has been made to our resources. Such an operation will be attended with much difficulty when the uterus is surrounded as by a mass of plaster-of-Paris, and the tubes and ovaries with their adhesions probably remaining, giving rise, it seems reasonable to suppose, to the same morbid symptoms as before, a not very encouraging prospect. If we are to remove the uterus for the purpose of drainage of suppurative cavities that involve danger from removal per

abdominem, as also to rid our patient of a sodden uterus, very good, but as an operation to avoid opening of the abdomen, we fail to see the logic of the procedure, as later we would expect removal of the remaining sequestrum (tubes and ovaries) would be necessary to effect a cure in many cases. It would appear to us then, after a partial review of the subject, that the removal of the uterus to effect cures might better be the subsequent rather than the precedent operation. I believe certain cases in fairly good condition, requiring for the best results, that the uterus should be removed, may best be treated by total extirpation per abdominem, with the appendages, thus securing the most perfect ablation and drainage possible, and at the expense of very little additional time in the hands of the experienced. It occurs to me that in the light of our present successes by well-established methods, the operation of vaginal-hysterectomy will not appeal with sufficient force to the average operator to make it easy for him to decide when such an expedient should be entertained, and should such be the case, results to be obtained are likely to be unsatisfactory in part, owing to definite opinions as to when and how to apply it. Certain it is we are not ready to accept such a procedure in all cases which imply the bilateral ablation of the appendages, though the assertion that the uterus can serve no purpose obtain with some force. Finally we should say that such a procedure, except in very rare cases, has only a place as yet in experimental surgery.

Two Cases of Freund's New Operation for Prolapse.

W. L. BURRAGE, M. D.

HERMANN W. FREUND published in the *Centralblatt für Gynäkologie* for November 25, 1893 (No. 47, pp. 1081, 1085), a description of a new operation for prolapse. He gave the details as to performing the operation, making use of one figure showing the manner of passing the sutures (which I have tried to reproduce on the blackboard), and the histories of two cases on whom he had operated. In closing the article in question he stated that he had done five others later on, all with success.

I had the good fortune to see Dr. George M. Edebohls do this operation at his clinic at St. Francis Hospital, last January, and was much impressed with its ease of performance and determined to put it to the test at the first opportunity.

It is perhaps unnecessary to state that the operative procedures for the cure of prolapse commonly in vogue, whatever may be said to the contrary by enthusiastic advocates of this or that operation, have proved in the majority of cases unsuccessful in their ultimate results. As to the plastic operations on the vaginal walls, although the immediate results are usually good, the weight of a heavy uterus or the intra-abdominal pressure generally reproduces the prolapse in the course of time through a gradual stretching of the tissues. Shortening of the round ligaments is unsatis-

factory, for the reason that in older women the ligaments are apt to be fatty degenerated, and, if they are not, they stretch out if they are called upon to support a heavy uterus. Hysteropexy is open to the objection that it is a serious operative procedure and that it anchors the uterus in a false position, and that it gives no proper support to the blood vessels of the pelvis.

Bearing these facts in mind, a new method of cure, originated by a man of Freund's eminence, merits a careful trial. His operation has to commend it, its perfect simplicity and its quickness of performance—important considerations in old women, among whom prolapse is most common. The two cases I report are a contribution to the study of how to best treat prolapse.

Freund's operation consists in pushing up into the pelvis a small portion of the prolapsed part and then burying in the sub-vaginal cellular tissue a suture that is not absorbed, in the shape of a small ring. The most dependent portion of the prolapsed part, after the ring has been placed, is seized with a hook and pushed up and another similar ring placed. And so on until all of the vagina is inside the vulva, the last suture passing under the fourchette. The sutures are left buried. When completed the uterus is well inside the body and there is a canal the size of a lead pencil leading to the os externum for the escape of the uterine discharges.

Read before the Gynecological Section of Suffolk District, Massachusetts Medical Society, Feb. 27, 1896.

Freund uses silver wire and places it with a curved needle, making the circuit of the vagina in three stages. He used only three sutures in his first two cases. He claimed to do the operation in his office without ether and send the patient home afterwards. I gave my patients ether and kept them in bed for a few days. The histories of my cases follow:—

CASE I.—E. E. H., widow, 69 years of age, first came under my observation in March, 1891. She had then a capacious sub-involuted vagina and a small uterus. Her doctor had been treating her with a large colpeurynter to relieve her of her chief complaint, a feeling of prolapse, needless to say without permanent relief. I thought that by doing an extensive posterior colporrhaphy and the subsequent use of astringent vaginal injections to cure her. Accordingly I operated. She went home in three weeks much improved.

Mrs. H. again came under observation January 26, 1894, complaining of the same feeling of prolapse. She was wearing an Albert Smith pessary and said she was unable to walk without it. The vagina was still capacious and the walls lax. Although this was not a case of true prolapse, but rather one of long standing sub-involution of the vagina, it seemed to be suitable for Freund's operation. I operated, using six sutures of silkworm gut, and closed the vagina all but a narrow tube. She was up and about in a week and went home with an apparent perfect result. She wrote me under date of January 3, 1895, in response to my inquiries, that she was enjoying good

health; that she had no local trouble except after heavy lifting; but she added: "I think some part of the work you did has given out!" I have been unable to see her and cannot say what the local condition is.

CASE II — M. E. T., widow, 56 years old and the mother of two children, entered St. Elizabeth's Hospital, April 6, 1894. She gave a history of having had two tedious labors, but normal convalescences. Menopause at 50. Her only complaint was a feeling of "prolapse of the bladder," with which she had been a sufferer for fifteen years. Being obliged to be on her feet a great deal, she was made very miserable by the prolapse, which was worse on standing and when the bladder was full. Pessaries would not stay in place. Absolutely no trouble with her urine. On examination, the anterior vaginal wall was found to come outside the vulva on straining, and the bladder wall with it, making altogether a mass the size of a small lemon. The uterus was small, two inches in depth, and anchored in retroversion high up in the pelvis. There were several large tabs of redundant mucous membrane, one on the cervix and several on the anterior vaginal wall. I think I made a mistake in removing two of these at the first examination, for, operating a few days after, it is possible that small portions of granulating surfaces may have been overlooked and covered up by the operation, thus contributing to the poor ultimate result in this case. The operation was done on April 10. Six sutures of worm gut were used, the gut having been pre-

pared by washing in warm water, long soaking in corrosive alcohol and sterilization with steam. The vaginal tissues were very tough and the operation was made difficult by the fact that all the sutures had to be placed inside the vulva. The immediate result was perfect. The patient was up in a week and went home in two weeks. She might have gone home sooner but being weak and nervous she desired to stay longer than there was need in order to build up her strength.

May 18, she came to my office, complaining that she was sore in the region of the vulva. The lowest stitch could be seen bare in the vagina, and there was a discharge of pus from the upper vagina. The stitch was cut and removed, and she was given a douche of Dobell's solution. December 18, she entered St.

Elizabeth's in the service of Dr. Kingman. At that time all the rings but one had sloughed out; that one could be seen partially uncovered in the right upper vagina. Dr. Kingman did an extensive anterior colporrhaphy and a flap splitting perineum. He found, in the course of the operation, several cysts of the vagina and sinuses about the worm gut suture. Through Dr. Kingman's courtesy, I have had the opportunity to see that he has obtained a most satisfactory result.

Although the remote results in my two cases were not satisfactory, still, taking into account the fact that neither of them was a typical case of prolapse of the uterus, but rather prolapse of the vagina, and that the bad result may have been due to faulty technique, I am inclined to give the operation further trial.

The French Method of Vaginal Hysterectomy—Operation and Results.*

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IN 1886, Péan removed the uterus vaginally from a woman who had undergone cœliotomy at his hands four years previously. The primary operation was done for inflamed appendages and was unsuccessful in relieving pain; the hysterectomy was

brilliant in its results. This incident lead him to think that perhaps too much attention had been bestowed upon the appendages, and that the uterus might be quite as much responsible for pelvic pain as the ovaries and tubes. Reasoning that the uterus was diseased as well as the appendages, and frequently morose, though perhaps not recognized as

*Read before the Gynecological Section of the Massachusetts Medical Society, December 27, 1894, for the full paper of which this is an abstract, *vid.*, *American Journal of Obstetrics*, March, 1895.

such, he came to the conclusion that in cases of pelvic inflammation, involving the female organs of generation, not only should the appendages be removed, but likewise the uterus as well. As his observations extended and his experience grew larger, he found that even in those cases in which the uterus was removed and the appendage abandoned, a cure resulted which proved to be permanent in the vast majority of cases. A convincing argument in favor of the new method was that the mortality was very much lower than that of cœliotomy, *cæteris paribus*. His first sixty cases all recovered; among them were severe types of pelvic inflammation, with dense adhesions, matting the intestines together to such an extent that cœliotomy would have been dangerous had it been attempted.

For a while Péan stood alone in upholding his views. Ségond was the first convert. He saw Péan operate and cure a patient who had the worst kind of pelvic inflammation. It was clearly a desperate case; the uterus was firmly imbedded in dense adhesions; the induration of the viscera extended almost up to the umbilicus; to remove the appendages by cœliotomy was not to be thought of; to remove the uterus vaginally under such conditions seemed impossible. Péan demonstrated the feasibility of doing this, and cured the patient besides.

Gradually the operation gained a foothold, mainly through the able writings of Ségond, until now even its bitterest opponents are forced to admit that it has its place in surgery. At the present time the question

when to do vaginal hysterectomy and when to do cœliotomy is far from settled. There are some who do the vaginal operation in all cases of double salpingitis associated or not with purulent collections; others who do it only when cœliotomy is contraindicated; still others who occupy a middle ground. As in all questions of this kind the future will decide.

OPERATION.

The preliminary treatment of the patient is simple. Care should be taken to have the bowels well moved. Attention to asepsis needs no comment. The instruments needed are long scissors; an abundant supply of forceps of various shapes and sizes; hooks; knives; retractors of a special type. Here let it be said that it is impossible to do vaginal hysterectomy for adherent uteri unless clamps are used which remain *in situ*. In the descriptions which follow it will be assumed that clamps are used. The Péan retractors must be mentioned. They are flat blades, gently curved at the very end, mounted on strong aluminum handles. In the middle of the instrument, at the junction of the blade and the handle, is a sharp angle, which increases the efficiency of the instrument in no small degree. Each blade is four and one-half inches long, and one and one-fourth inches wide; the handles are of about the same length. Four of the retractors are of the same size; a fifth is only seven-eighths inch wide, though of the same length; it is very useful to slip into the peritoneal cavity through a small opening, and serves as a guide for the finger or a larger retractor.

The operation is perhaps the most difficult of any on the pelvic organs. At times the uterus can be removed with moderate difficulty, at times it seems almost impossible to remove it by any means.

Briefly it may be described as having three stages; first, the removal of the inferior segment of the uterus; second, removal by morcellation of the anterior wall of the uterus; third, eversion anteriorly of the stump.

One of the most skillful of the French surgeons is Richelot. He operates as follows:—

The patient being on the back, the four retractors are placed in position, one on each side and one anteriorly and posteriorly. The cervix is then seized and the uterus drawn down as much as possible. An incision is made with a long knife in a circular manner, keeping half an inch or so from the *os externum*. Directly the incision is made, the end of the anterior retractor is thrust into the wound and the tissues pulled up along the surface of the cervix. The sectioned tissue yields a good deal, surprisingly so in fact, and it is just this manœuvre that makes the Péan instrument of so great value. While the retractor is pulling back the tissue, the blunt pointed scissors are used to separate the attachments between uterus and bladder, the curve of the scissors pointing inward; short snips are taken from left to right, the greatest care being exercised to keep close to the uterus for fear of wounding the bladder; with each snip of the scissors the retractor takes a fresh hold, being introduced into the part

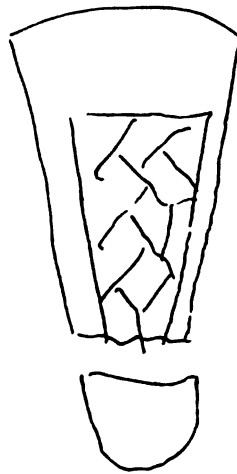
just cut. It is truly astonishing to witness for the first time the help given by the retractors; without them morcellation would be impossible. Having denuded as much anteriorly as possible, the same should be done posteriorly; here the finger will prove of greater assistance than the scissors in separating the attachments. There is but little hæmorrhage, and it may be disregarded. Now the forefinger is placed on the anterior surface of the cervix and glides along towards the base of the broad ligament; it penetrates between the anterior peritoneal fold and the ligament proper, and pushes aside the ureter, which is not far distant; the same is done behind. Then two fingers grasp the broad ligament and serve as guides to the first clamp, which seizes at least an inch of the ligament a short distance from the uterus. The ligament is then cut close to the uterus the whole length of the forceps. The same is performed on the opposite side.

The cervix is now split transversely from side to side with the straight scissors. Two flaps are thus made, an anterior and a posterior; they should extend almost up to the ends of the forceps. The posterior flap is now amputated. The rest of the operation deals mainly with the anterior wall of the uterus. The anterior flap is seized with a strong pair of three-toothed forceps and traction downwards made. The uterus begins to roll anteriorly, thanks to the void which has been made behind. At the same time denudation of the anterior surface proceeds with finger and scissors.

Having made some progress the anterior flap is in turn amputated, but before doing this care should be taken to seize its base with tenaculum forceps, otherwise the stump would retract. If the uterus shows a disposition to descend, a second set of flaps may be made and amputated after preliminary hæmorrhage of the broad ligament; but if the uterus is adherent this should not be done, because the stump would give a poor hold; it is better to attack the uterus in the anterior median line. Placing a tenaculum forceps on each side of the canal, to the right and left, the stump is pulled down as much as possible and liberation effected between bladder and uterus. When some progress has been made the anterior uterine wall is morcellated in small pieces with knife and scissors in the manner shown in the following diagram :



At times an oblique morcellation will be of greater advantage than the vertical. Thus :



The part removed should include all tissue down to the uterine cavity. Now other tenaculum forceps are inserted in the upper edges of the excavation; renewed traction is made; more denudation effected, and the process continued until the peritoneal cavity is opened. At this point all embarrassment ceases, because the bladder is definitely protected. Central excavation or morcellation is a quick process; the uterine cornua incline towards the median line; the fundus descends in the form of a V, which allows of its being hooked with the finger and pulled down and out. If there are adhesions behind, they may be separated under the eye with the greatest ease. Having done this, a strong clamp seizes the upper part of each ligament down to the clamp, which has been placed in position from below, and the rest of the stump is amputated. Should there be any difficulty about everting the organ when once the peritoneal cavity has been reached, the uterus may be bisected antero-posteriorly in the

median line and each half clamped separately. In all these procedures there is little or no hæmorrhage. Very rarely is it impossible to remove all the uterus by this method. When there are numerous extensive adhesions, the operation is laborious and slow, requiring extraordinary patience. If during the operation a pus pocket has been opened the operator waits until the flow of pus ceases, then he proceeds exactly as though nothing had happened. Large abscesses need not cause alarm. Péan has done hysterectomy in a case in which the abscess reached up to the umbilicus. If the uterus has been removed without opening these cavities they may be sought for now with the finger and opened into the vagina. As to the treatment of the appendages, the matter may be summed up in a few words: When the appendages can easily be removed it is proper to remove them, otherwise they may remain behind. The inflammatory deposit disappears in an incredibly short space of time. The following case which came under my observation will illustrate.

M. J., 29 years of age, was admitted to the Broca Hospital (Pozzi's) August 12, 1894. She had had two children. Ever since the birth of her last child, three years before, she had been suffering from inflammatory pelvic trouble which had confined her to her bed most of the time. The longest period of quiescence was three months; the rest of the time she had been practically bedridden from suffering. She had had four attacks of severe pelvi-peritonitis, the last, eight days before her admission

to the hospital. Examination showed a uterus which was fixed, immovable, and surrounded by dense adhesions; on the right, a mass the size of a good sized fist; on the left a smaller one. Hysterectomy was done by Dr. Jayle, Dr. Pozzi's first assistant. No pus was found. There was no great post-operative shock and no unfavorable symptoms of any kind. In three weeks the patient was walking about and perfectly well. I had examined her before operation and easily made out the masses on each side of the uterus. Examination was very painful and her general condition very poor. She was sleepless from pain and suffering and in a most wretched state. When I examined her again after her convalescence I was astounded to find that the mass on the left had almost entirely disappeared, and that on the right there was nothing remaining but a lump the size of a small hen's egg. She told me that she was perfectly well and that she had no pain whatever. And yet both ovaries and tubes were left behind!

When, however, the appendages can be removed it is proper to remove them. The contents of the pelvis when inflamed may be compared to an arch, the keystone of which is the uterus; this being removed it is in most instances easy to remove the sides of the arch, for they can be undermined and attacked from below. Sometimes it is necessary to separate adhesions. The line of cleavage is found and they are separated exactly as in a coeliotomy. Having enucleated the ovaries and tubes, clamps are put at their bases and

they are excised. But very rarely is it that they have to be abandoned.

The dressing consists of iodoform tampons which are placed between the forceps and above their extremities. Richelot prefers never to use a self-retaining catheter and has the urine drawn by a nurse. The forceps are removed in 48 hours, but the upper tampons not before the sixth day. In three weeks patient is well.

HYSTERECTOMY IN CASES OF FIBROIDS.

The operation begins as usual by making the circular incision, freeing the cervix, clamping the uterines and cutting the lower portion of the broad ligaments. The field is thus secured against hæmorrhage, never excessive in fibroid operations. The cervix is now split transversely and the entrance to the uterus laid wide open with traction forceps. The object now is to empty the fibroid contents of the uterus by morcellation. Tumors of small size may be met, which are gently enucleated, cut with the knife, or simply torn out with the traction forceps. Some uteri are literally crowded with these small tumors. In other cases a single large tumor is present. It is attacked at its base and removed in pieces. There is little or no hæmorrhage. Finally nothing is left but a flabby sac, which is morcellated in turn or which can be everted with ease. Should the tumor be very large it may be necessary to do progressive clamping of the ligaments and remove the lower portions of the muscular walls so that the upper part of the tumor may be reached. Almost

all the work, long and tedious at times, has been done outside the peritoneal cavity, which is opened at the end only.

The after treatment is the same as in cases of adherent uteri.

THE RESULTS OF VAGINAL HYSTERECTOMY PERFORMED FOR PELVIC INFLAMMATION.

The statistics of Jacobs and Richelot are the latest published. Both of these men are skilled operators and their results may be considered as fairly representing the merits of the operation. Jacobs has done the operation for double inflammatory affections of the appendages 166 times; he had 162 recoveries and 4 deaths—a mortality of 2.4 per cent. Of these 113 were double purulent collections, which were due to salpingitis, ovariitis, or encysted peritonitis; there were 111 recoveries and 2 deaths—a mortality of 1.8 per cent; the two deaths were due to cardiac complications. The bladder was perforated twice; the intestines once; the opening was sutured immediately and no fistula resulted. In 98 of these recoveries the patient was followed for a period varying from one to four years; the rest were lost sight of. Five or six complained of vesical pain due to adhesions; one died from dementia 8 months after the operation; one had an incurable intestino-vaginal fistula; two have had and now have severe pelvic pains, which, however, are intermittent; 88 were absolute cures. Analyzing the 43 cases of non-purulent inflammatory troubles, we find that one died during the operation (renal case); thirty-five

were absolute cures; there were some rebellious gastritic complications; the rest were lost sight of. In ten cases of tumor, complicated with bilateral inflammation of the appendages, one died from embolism soon after the operation; seven were followed for a year, and were completely cured.

He gives his abdominal work by way of comparison. There were 165 cases with 4 deaths, giving a percentage of 2.4; yet it is to be remarked that in 56 of these cases the lesion was unilateral; it is also noteworthy that many of the cases operated on vaginally were desperate ones, and inoperable by the abdominal route. The distant results of his cœliotomies are as follows: out of his 10 unilateral pyosalpinx cases there were 4 permanent cures; the remaining 6 had subsequent inflammation on the opposite side. The results in the cases of bilateral pyosalpinx are especially noteworthy. There were 3 deaths and 28 operatory recoveries; 25 were seen later; 17 of these had uterine or peri-uterine affections which required curetting in 11 instances, with or without amputation of the cervix; 4 of them had to have a hysterectomy performed to relieve them of their sufferings; in 5 there was rebellious parametritis. Among the 44 cases of non-purulent bilateral salpingitis many suffered from chronic uterine affections; in one, vaginal hysterectomy was performed; in many others, some kind of local treatment was needed. He had 34 cases of bilateral ovaritis; many of these required local treatment afterwards. The unilateral affections of the ovary (46) in general did well.

In many instances operation for hernia following the cœliotomy was required.

Richelot had 103 cases of strictly inflammatory diseases of the appendages, 61 of which were associated with pus. There were 7 deaths—a mortality of 6.7 per cent. Analyzing these cases we find that cures were obtained in almost all. In some there were heat flashes and nervous symptoms which disappeared in a short time; a few had tender vaginal cicatrices, but these were temporary. Richelot states, however, that in some instances when the appendages are left *in situ*, subsequent inflammation is possible. Sexual appetite is not diminished.

Landau's work is remarkable. He regards cœliotomy as the operation of choice, but in certain cases he thinks vaginal hysterectomy infinitely superior. He says: "There is a category of cases of suppurative diseases of the pelvic cavity which are not amenable to the usual forms of treatment; in these cœliotomy is extremely dangerous and puts the life of the patient in peril. These cases are those which are complicated with rupture of the tube into the bladder, rectum, or intestines; reference also is made to multiple abscesses, which are intra or extra-peritoneal. In these, the best treatment is that inaugurated by Péan, Vaginal Hysterectomy, with *removal* of the appendages." He has had 30 cases of this kind without a single death.

Péan's results are phenomenal. Up to December 31st, 1892, he had done the operation 150 times with

one death. Most of them were serious cases and of long standing. In two only were there post-operative symptoms referable to the bladder; they were finally cured. A table collected from various sources, principally European journals, shows a mortality of 4.6 per cent. The operators are well-known. Among them may be mentioned Pozzi, Ségond, Richelot, Jacobs and Landau. The total number of cases is 724, with 34 deaths.

In vaginal hysterectomy for fibroids, the results are even more striking. From the same sources 406 cases were collected, with 7 deaths, a mortality of 1.7 per cent.

Aside from the favorable statistics, the advantages of vaginal hysterectomy are manifold. There is no cicatrix and no danger of ventral hernia. The shock is infinitely less. There is no danger of subsequent trouble on the part of the uterus. When properly performed by a skillful operator it is a much cleaner, more satisfactory operation. The pus flows down a natural incline and the drainage is perfect. Most of the objections to the operation are of a theoretical nature and have been raised by men who have never seen it performed. There is no more

danger of wounding the ureter or of clamping the intestines than in an ordinary cœliotomy. Hæmorrhage can be guarded against by preliminary hæmostasis. It is not a blind operation in any sense of the word, for one of the first essentials is to see exactly what is being done at all stages. The large retractions make this possible. It is particularly to be recommended in cases complicated with vesical or intestinal fistulæ. Here the natural contraction of the tissues does the most to close the openings. Ségond had a case of a woman who passed all the feces through the vagina. No plastic operation was done. The simple contraction of the tissues, the uterus having been removed, closed the fistula; it was a case of double pyosalpinx.

The operation has not been received with universal acclamation in America, and it will probably be some time before it is. That it has a place in surgery has been amply proven. To what extent it will take the place of cœliotomy, the future will decide. Those who have had most experience with it are fully satisfied with the excellent results which are obtained.

22 Highland Street.

The Diagnosis of Dermoid Cysts of the Ovary.

DR. AIME GUINARD,

Surgeon to the Hospitals of Paris.

(Translated in extenso from *La Gazette de Gynecology*, January 1, 1896.)

Is it possible, granting that a diagnosis of ovarian cyst has been made, to affirm that it is a dermoid? In other words, can the nature of the contents of an ovarian cyst be clinically determined? This is the question which will be discussed in this short article. It is to be understood that I suppose, in the first place, that the presence of a cystic tumor of the ovary has been found by the ordinary signs. This is consequently a most limited point in the history of these cysts that I here take up, and I desire to show that diagnostic precision may be carried farther than is usually done, and also to affirm the congenital origin of ovarian cysts, simply on a basis of clinical examination.

This question is hardly spoken of in our classical text-books. The greater number of writers dismiss the subject by denying the possibility of differentiating dermoids from other ovarian cysts. The text-books give but one means of differential diagnosis, namely, by an exploratory puncture. Koeberlé believes that, as puncture is not absolutely without danger, it is better to abstain in most cases, and only perform it as a preliminary operation, to be very soon followed by ovariectomy. He says: "Puncture should only be practiced when the surgeon has decided to perform ovariectomy."

In their treatise on Congenital Cysts, Lannelongue and Achard give as a rule that "there is no sign which permits of diagnosing this kind of tumor with certainty"; and, speaking of exploratory puncture, these authors say "that, in only certain cases, the examination of the contents obtained by puncture allows of establishing a diagnosis."

Dr. Ségond is still more explicit in his article in the *Encyclopédie de Chirurgie*: "The symptomatology of dermoid cysts of the ovary offer nothing that is characteristic; they are, like all ovarian cysts, exposed to inflammation, rupture or torsion, and the liquid withdrawn by puncture is in definitive, alone capable of furnishing decisive signs."

As is seen, I only cite recent writings, and, as one may think, in the most ancient articles the uncertainty of the diagnosis is still more evident. I will only recall the following lines from the thesis of Cazeaux: "In the present state of science, we are lacking the physical signs by whose aid we can, I do not say recognize, but even suspect a dermoid cyst, before any process of elimination has permitted to penetrate, by whatever manner, to the interior of the cyst."

Exploratory puncture, however, is the only means generally mentioned which is of aid in clearing

up the diagnosis. But I will not insist on this point, for laparotomy is a means far more certain and at least as safe. It is now well understood that the surgeon should be most sober in making these explorations, which are the most often dangerous. Does anyone know the degree of septic material contained in the liquid of an ovarian pocket? And is it not better to remain in doubt as to the nature of the cystic contents than to run the chance of producing super-acute peritonitis in your patient?

The question should perhaps not be considered in the tragical manner of Stilling, who "considers puncture as a crime," but one should, I believe, reject it purely and simply. To conclude the opinions quoted on this subject up to date, I must recall that Sir Spencer Wells and Girdaldès have given as a diagnostic sign of the tumors in question the difference in consistency of the cyst walls by palpation; while certain parts are distinctly fluctuating, others give the sensation of solid tumors or cartilaginous lumps.

On the other hand, Lawson Tait has mentioned pain as a symptom, which is alone capable of diagnosing a dermoid cyst of the ovary. It is almost useless to say that unequalness in consistency of the walls mentioned by Sir Spencer Wells has really no value in this particular case, and is met with as well in the greater number of multilocular cysts. As to pain, it has a major importance in the question, and Lawson Tait has the merit of insisting on the conclusions furnished by it. But, as we

shall see further on, this symptom acquires a real pathognomic value, only when it is associated with other elements, to which I now precisely call your attention.

Before going farther with our subject, I will show how I was led to the firm opinion that I have formed on this subject. I will only give a very short *résumé* of the most important cases, which have been published *in extenso* in the thesis of my student Lesourd (Paris, 1894).

In 1888 I saw a woman, aged twenty-eight, in the country, and made the diagnosis of ovarian cyst; I advised her to come to Paris to be operated on. She entered the Hôtel Dieu in the service of Professor Tillaux, who affirmed the diagnosis of a dermoid cyst, based on the simultaneous presence of the three following signs: spontaneous pains, slowness of evolution (the cyst was quite small), and the age of the patient.

A laparotomy showed that the tumor was the size of a foetal head, containing a large number of colorless hairs and twelve teeth well developed in a purulent liquid. There was as well a peculiar looking bone floating in the fluid, held to the wall by a fibrous pedicle. The shape of this bone did not recall any bone of the human skeleton. Recovery took place in a few days without the slightest accident.

I was very much struck by this case, and a few years later, while examining a patient, who, by a strange coincidence, was sent me by the above mentioned patient, I made a diagnosis of a dermoid cyst of the ovary. She presented, in fact, the syndrome to

which Professor Tillaux had called my attention, most distinctly. The patient was thirty-seven years of age, and had suffered over fifteen years with an abdominal tumor. It certainly was an ovarian cyst, but the tumor was spontaneously extraordinarily painful and had taken over fifteen years to develop. At that time I was taking Dr. Blum's service at the Hospital St Antoine. Two days before the operation (Aug. 12, 1893), the patient was taken with a most obstinate diarrhœa; the cyst had opened into the intestine. Laparotomy showed that the principal tumor was in the left ovary and communicated by a large opening with transverse colon at its middle. The right ovary was the seat of a dermoid cyst the size of a turkey's egg. From this date I can say that I have never met with a dermoid cyst of the ovary without making a clinical diagnosis.

In December, 1893, a patient in the service of Dr. Peyrot at the Hôpital Lariboisière, had, at the age of thirty, a small tumor in the left ovary, producing such violent pains that at the time of each menstruation, for one year, morphine had to be injected. I showed the students that the symptom pain, which is rarely met with in multilocular cysts of the ovary, was associated in this case with two other signs, namely, the small size of the tumor and the young age of the subject, and that this was the characteristic syndromata of dermoid growths. Laparotomy was done and a dermoid cyst of the left ovary the size of a foetal head was removed, while in the right

ovary was found another tumor of the same nature the size of a hen's egg.

On March 14, 1894, I made the same diagnosis, based on the co-existence of the three same signs. The patient was sent me by Dr. Landrieux with the diagnosis of ovarian cyst. She was thirty years of age and had been suffering for the past five years with very severe abdominal pains. Diagnosis was confirmed by laparotomy. The pocket was lined with epidermis, with hairs implanted in it, exactly like the scalp. In several places were found teeth, rooted in as if in a projecting gum. The specimen was so remarkable that it was placed in Dupuytren's Museum.

In *résumé*, the conclusions which may be deducted from what has been said, I think, would show that there is no one symptom which, if taken alone, could characterize congenital cysts. But, when a patient with an ovarian cyst presents the three symptoms mentioned above, which I will enumerate once more — pain, slow growth or small size of the tumor, which mean the same thing, and the patient still young — the surgeon may affirm the dermoid nature of the tumor. Prof. Tillaux recently has repeated to me that this syndromata has served him for several years each time that he has found himself in presence of an affection of this kind. For my part, since my attention has been brought to bear on this point, it will be seen that I arrived at a complete and correct diagnosis.

I ought, however, in order to give a true statistic of all my cases that I have seen since my first one, report

two other cases, interesting for that matter in several other points. I shall not go into details.

On Jan. 6, 1894, a little girl aged twelve, entered the Hôpital Cochin, in the service of Dr. Schwartz. I was called in the afternoon, as I was the surgeon on guard at the Bureau Central. The child was shown me as a case of intestinal obstruction; for three days no feces nor gas had been passed. Patient had vomited all purgatives that had been given her, and had rendered intact all the enemmas which had been administered. At my arrival I found the child sitting on her bed, the hands and feet icy cold, the nose pinched, cold sweats, and complaining of especially violent pains around the umbilicus. Patient vomited incessantly. It was impossible to make the child lie down, making an examination of the abdomen impossible; and, as the general condition was most serious, the patient was chloroformed, so that I might study the case thoroughly and operate if necessary. A few drops of chloroform were sufficient to produce resolution, and I was much surprised, on placing my hands on the abdomen, to find it rounded in shape, due to the presence of a hard, smooth tumor, which was movable transversely and completely dull on percussion.

A median incision showed a dermoid cyst of the ovary, the size of a foetal head at term. Introducing my hand into the pelvis, I found the pedicle twisted several times on its axis, in such a manner that the acute symptoms noted were due to this torsion. A large bunch of hair in the midst of a sebaceous mass filled

the cavity of the cyst, while a tooth, resembling a canine in form, was implanted in the internal wall of the pocket.

The patient made a good recovery, without any complication. I saw her recently again, and I was able to assure myself that if I had not made the diagnosis of a dermoid cyst of the ovary before operating, it was because I was misled by the conditions under which I saw the patient, for the pathognomic symptoms were in reality present.

Abdominal pains had been present for over a year and the patient was only twelve years of age. Consequently it was not a fault in the clinical aspect; it was the fault of the clinician in the error committed.

The second case to which I make allusion is as follows: I made a mistake in just the opposite way from the foregoing case. A woman, aged twenty-six, entered the Hôpital Lariboisière, in the service of Dr. Peyrot, June 7, 1894.

The patient had suffered for a year with sharp pains in the abdomen, and above the pubis a tumor the size of a foetal head at term was found.

I thought that I was in the presence of the pathognomic syndromata and made the diagnosis of dermoid cyst. A laparotomy showed that in reality it was a simple cyst, whose pedicle was long and appeared oedematous. The pedicle was twisted on itself three times; the walls of the cyst were violet in color, thickened and very vascular.

This case, interesting on account of the mistake to which it gave place, gives perhaps the reason for the exist-

ence of Prof. Tillaux's syndromata found in dermoid cysts of the ovary. It is known that these cysts are more exposed than other varieties to get twisted on their pedicle. They are generally more movable than other cysts, and, for that reason, are exposed to torsion of the pedicle which condition gives rise to the severe pains, a kind of "peritonism," and even to serious symptoms, simulating intestinal occlusion.

No matter what may be the explanation, it nevertheless results from what has been said, that one can in the majority of cases precise the dermoid nature of a cyst of the ovary

on basing one's self on the co-existence of the three named symptoms and only making a little reserve as to torsion of the pedicle in ordinary cysts.

I think then, that I may conclude, contrary to what is told us in our classics, that the diagnosis of the dermoid nature of a cyst is possible without having resource to puncture, which is always dangerous, and which should be given up entirely.

There is no one symptom which, if taken alone, allows of making a diagnosis of dermoid cyst. This syndrome consists of spontaneous pain, slowness of evolution and the age of the patient.

EDITORIAL.

Blood Examination in Septicæmia.

AT the present day bacteriological examination of the blood is being much investigated, as is proven by the many excellent papers that have recently appeared from the pens of Moses, Czerng, Hanot, Phulpin, Achard and others. At the beginning of bacteriology, all micro organisms were thought to be found in the blood, but the mistakes became so numerous that bacteriological examination of the blood fell into the most utter discredit. But with the progress of bacteriology, when the "habits" of the micro-organisms were better known and understood, as well as the reaction of the tissues, the manner of action of bacteria, etc.,

workers began to come to their ideas, and to-day bacteriological examination of the blood is destined to become a means of clinical diagnosis.

In this connection an article on the subject by Dr. Sittmann, which was read recently before the Medical Society of Munich is particularly interesting.

In the first place, Dr. Sittmann established the fact that there is no reason for separating pyemia from septicæmia, and that it is more rational to designate both terms under the name of pyosepticemia. "If," as he says, "the clinical evolution of pyemia and septicæmia differ in spite of the identity of the pathogenic

agent (pyogenic organisms), it is because these agents possess two distinct properties, viz: to form toxins and proteins. If the bacteria which are carried into the organism have the properties of elaborating very large doses of toxins, or if they find in the organism favorable conditions for exciting these properties, we have the picture of septicæmia.

If these properties are wanting and if the living and proliferating bacteria can only produce the protein by the death of isolated individuals, they produce pyemia. In the greater number of cases there is a combination of both phenomena and in the clinical point of view they should be grouped under the name of pyosepticemia."

Dr. Sittmann has personally examined the blood of twenty-three cases of primary or secondary septicæmia, and in all the cases examination of the blood gave positive results. Eleven times he found the staphylococcus, four times the streptococcus, six times the pneumococcus, and twice a mixture of staphylococcus and bacterium coli.* The number of bacteria per cubic centimetre was variable. It was from one to fourteen for the staphylococcus, from seven to two thousand two hundred for the streptococcus. The large number of streptococci explains why infection by the streptococcus has been considered more frequent up to the present time than the infection from the staphylococcus.

Now, as a matter of fact, it was the custom to make the examination

with a very small amount of blood, and under these circumstances the staphylococcus was not found, because as has just been said, they only are present in the blood in small numbers.

Of the twenty-three cases examined by Dr. Sittmann, sixteen died; four out of the six cases of infection by the pneumococcus and mixed infection ended in death. The prognosis is consequently more favorable when the infection is produced by the staphylococcus, less so for that of the pneumococcus, and very unfavorable for the mixed variety.

If, excepting the streptococcus and staphylococcus, bacteria are found in the blood whose preferred abode is in the lungs, as for example the pneumococcus, the manner of entering the blood should be found in these organs. If on the other hand their ordinary home is in the digestive and genito-urinary organs it is to be supposed that the primary localisation is to be found in these organs. Thus for example, if the bacterium coli is found in the blood, the affection is primarily in the bile tract or the bladder, and it is only later that the general infection invades the entire economy.

The bacteriological examination of the blood facilitates the search for the primary seat of the affection, and it is readily understood what importance the knowledge of the seat of the primary affection is to the physician, for by destroying this primary focus the general infection may be ruled out. It is in this manner that bacteriological examination of the blood is of the greatest value.

*NOTE.—The probable part played by the bacterium coli in puerperal septicæmia has already been mentioned by Dr C. G. Cumston, *vide* Transactions of the Mass. Medical Society, vol. xvi., page 432, 1894.

Discussion on the Treatment of Pelvic Suppuration, at the Medical Society of Berlin.

AT one of the recent meetings of the Medical Society of Berlin, Dr. Leopold Landau read a paper on the treatment of pelvic suppuration. This paper is of great interest, inasmuch as it is, so to speak, the only one upholding vaginal hysterectomy, which, by the way, has become known as "Landau's Operation," among our German *confrères*, although in the discussion Dr. Gottschalk remarked that there was no difference between the so-called radical vaginal operation of Landau and the French operation, also adopted in Belgium.

Landau's paper may be summed up as follows: He holds that in principle the surgeon should give exit to the pus by the most conservative and simple means. The incision is first to be considered, and is indicated in simple, non-complicated single foci, whether the abscess be intra or extra-peritoneal. The incision should be made in the abdominal walls or in the vagina, according to the position of the abscess.

Landau makes his abdominal incision above Poupart's ligament in one step when there is absolute dullness, and in two steps when it is supposed that a coil of intestine is between the abdominal walls and the abscess. The incision is made in the same manner as for ligation of the iliac artery.

For some years Landau has recommended an exploratory puncture *per vaginam* in a great many cases in which the abscess might be mistaken for the fibrous body. The puncture

prepares the way for incision, which is performed by a cutting instrument invented by the writer's assistant, Dr. Vogel. Dr. Landau operates *per vaginam* in one sweep. By this method all abscesses of the pelvis can be cured, even unilocular pyosalpinx, which however may re-occur later on. The simple incision gives results allowing of its use in multiple abscess with considerable chance of success.

The simple vaginal incision is often not sufficient. In this case laparotomy must be performed, and the walls and contents of the abscess removed.

Landau gives the history of fourteen cases of laparotomy, performed for suppurating lesions of the tubes, with a mortality of twenty-eight per cent. This result, on the whole good, corresponds to that of other surgeons (Chrobak, Schauta, Zweifel, etc.). Unfortunately the results of the operation are not always of long standing. Definitive cures amount to only from sixty to eighty per cent. of the cases given in the statistics of Chrobak, Schauta and Landau.

Several causes of unsatisfactory results are given, such as:—

(1.) In laparotomy, hernia, adhesions of the intestine, and mesentery, with the cicatrix, etc.

(2.) Relapse of suppuration on account of the impossibility of completely removing the pyogenic germs of the uterus or the stumps of the tubes.

(3.) The purulent nature of the affection, abscess of the abdominal walls, infection of the peritoneum during operation, etc.

It is to avoid these that vaginal hysterectomy should be performed.

The writer recalls the first happy results secured in France by Péan, Segond, Richelot, and gives his statistics. Since May, 1893, he has performed twenty-six vaginal hysterectomies for pelvic suppuration.

Landau differs, however, from the above-named French surgeons on two essential points, and emphasizes their importance, in the first place as to technique, and secondly as to their indications. He has never simply extirpated the uterus, leaving the *adnexa in situ*, but has always removed the suppurating tubes, the ovaries and the membranes of the abscess *per vaginam*. When he cannot remove all the diseased organs through the vagina, he performs a laparotomy.

The speaker has not only employed this method in women suffering from a bilateral inflammatory affection, but for complicated abscess of the pelvis as well; and for Landau, these complicated abscesses are those in which, besides the pyosalpinx or bilateral ovarian abscess, there exist multiple intra or extra-peritoneal perisalpin-gitic abscess. These are the cases in which vaginal or abdominal incision remains without effect.

Landau has performed the radical vaginal operation now twenty-eight times in complicated abscess of the pelvis. In all these operations the multiple collections were made up of

fœtid pus; in a few cases there was a fistulous communication with the bladder or intestine; the patients also had been impotent for several years. In a small number of cases the adhesions with the large intestine were so close, especially at the sigmoid flexure and the bladder, where the abscess had profoundly penetrated the walls of these organs, that the diseased parts could only have been removed by producing a solution of continuity in them. Landau was twice obliged to close a vaginal fistula, once produced by the vagina, once by a laparotomy. A large circular resection cured the lesions of the sigmoid flexure.

The writer gives the *résumé* of his cases, which include still seven other cases of serious bilateral inflammation of the adnexa, but not suppurating, treated by the vaginal operation. The twenty-eight cases of complicated pelvic abscess were cured by the operation.

In the discussion, Veit, Koerte, Mackenrodt, Gottschalk and Duhrssen, all with the exception of the last-named gentleman, rejected hysterectomy on the same grounds as its adversaries in France, which are, wounding the bladder or intestine, the useless removal of all the genital organs, the non-protection of the peritoneal cavity against pus, thus exposing it to infection.

Laparotomy and posterior vaginal incision are consequently the disputed treatments for pelvic suppuration of genital origin, and the latter named operation appears to be gaining ground, at least in Germany.

SOCIETY PROCEEDINGS.

Massachusetts Medical Society, Suffolk District—The Section for Obstetrics and Diseases in Women.

J. M. JACKSON, M. D., SECRETARY.

REGULAR meeting, December 27, 1894, Dr. R. H. Washburn in the chair.

VAGINAL HYSTERECTOMY WITH DESCRIPTION OF THE FRENCH METHOD. BY DR. GARCEAU. (See page 374).

Discussion.

Dr. GARCEAU.—I hoped that Dr. Cushing would be present to speak of the three cases in which he operated by this method. In his absence I will speak briefly of these cases. The first case was done for a complicated retroversion. The ovaries were diseased, and there were some adhesions, but they were not very extensive. The woman was suffering very severe pain. She had been going from one gynecologist to another for a long time without receiving any benefit, and finally she came to Dr. Cushing. He decided to perform vaginal hysterectomy by this method, and was very well pleased with it indeed. It was a simple case, and the uterus came out very easily.

The second case was rather less satisfactory. It was a girl about twenty-three years old. There was some indefinite history of miscarriage, but not very certain. She came into the hospital with a large abscess on the left side. It was incised by the vagina and a large amount of pus evacuated. She did very well for about ten days; then the temperature began to rise again and she had one or two chills, with a good deal of pain on the right side this time. There was induration, but very high up, and Dr. Cushing

proposed to do cœliotomy. I persuaded him to do hysterectomy instead. He did so, but it was not a very successful case for this reason. The uterus was pretty firmly adherent and pretty high up. The large lump on the right side had raised the uterus so that it was rather high up. When he had taken out about one-half of it, he had a little hæmorrhage, enough to obscure the field, and it gave him considerable annoyance. He controlled it and soon afterwards opened the pus-pocket and put in a drainage tube. The girl was in a poor condition, and he thought it not advisable to continue. She got well.

The third case was a negress about thirty, married, who had one or two children. I do not know what the history was, but probably either gonorrhœa or something to do with miscarriage. She had a lump on the right side about the size of a good-sized fist and a smaller one on the left. She was not suffering very much pain, but looked septic, had a peculiar look about the lips and face, which is somewhat characteristic of these conditions, and she wanted some operation for relief. I asked Dr. Cushing to try this method. He did so and met very much the same kind of difficulty as in the second case. He extracted about one-half of the uterus, and had extensive venous hæmorrhage. He was rather embarrassed, I thought, at the time, and met with more difficulties, and decided not to finish the operation by that method. He opened the abdomen and took out everything, a large pus tube on the right side and a small one on the left. The patient died on the seventh day.

He was very much discouraged at this result, and told me he was afraid he could not operate again on such a case in this manner; but I think something must be said in regard to the way in which the operation is done. To be sure, I was there and assisted him, but, as I made mention in this paper, the operator has to see it done by a surgeon who has done it before. He cannot get a very good description either from books or hearing some one else talk about it, because the French operation is absolutely unique in its way. He had never seen these French instruments before and did not appreciate the great help which the retractors give. He did not know how to use them, and on that account, I think more than anything else, the operation was not successful. I do not say this in disparagement of Dr. Cushing's skill. Every one knows he is very skillful. I speak of these cases simply because he is away.

Dr. CONANT.—I have been extremely interested in this method, to hear it fully described by a person competent to do it, and who has seen the operation done by Péan himself. I am not a believer in vaginal hysterectomy. It is not many years ago that vaginal hysterectomy was the only operation advised by the leading gynecologists. They have left one stronghold after another, and even at the best showing which Dr. Garceau makes, they declare that the operation is best done when you get old chronic inflammation bilaterally. Even those who are firm believers in doing the operation when it is bilateral do not believe in it when it is unilateral. It seems to me, therefore, that while these statistics of his are remarkable, the question in my mind is, if the same time had been spent on the other method of doing the operation on a similar scale, we should not have got equally fine results. Certainly cœliotomy has

proven in cases of malignant disease and in cases of hysterectomy for fibroids to be far superior to any vaginal method that has been known. This operation of Péan's follows the rule of most of the French methods in that he resorts to clamps, and I think with the exception of the French operators, every operator of any prominence is opposed to a clamp left in as unsurgical, unscientific, painful, dangerous. The Germans and Americans are opposed to it, but the French almost invariably, when they perform hysterectomy, use the clamp. The German method goes in and ties off the uterine artery, ties off the ovarian arteries, brings the uterus down and then sews the peritoneum over the whole mass. If they take out tubes and ovaries it makes an extremely difficult operation, as any one can testify who has seen that method done. If they simply take out the uterus, the method is not nearly as serious, but it does have this merit to my mind, it closes off the peritoneal cavity, does away with all clamps, there is but little danger of secondary hæmorrhage, and it is one of the best of methods, it seems to me, if one prefers to do a vaginal hysterectomy. The other method is one which has not been used as much as it deserves, it seems to me, and that is the method of Pratt, of Chicago, who practically enucleates the uterus, and with it enucleates the tubes and ovaries. In this operation nothing is tied, or very seldom. Once in a while he gets a spurting vessel which it is necessary to pass a stitch through; but when you get to the wall of the uterus there is little arterial disturbance when you cut through it, but great disturbance when you are beyond, the uterine artery breaking up into a large number of small vessels. The cases which he reported have done very well indeed. Edebohls has recently

published a paper in the *Annals of Surgery*, in which he has described this operation and the use of it.

I have never seen this operation done, but the other vaginal methods which I have seen have impressed me as being very crude, both with regard to the anatomy and to the method in which they were done, and it is possible that the same cause may have existed in all those cases that existed in Dr. Cushing's cases. There is no question, it seems to me, at the present time, as to the value of vaginal hysterectomy in cancer.

The advantages claimed, it seems to me, of the simplicity of the operation and of the great opportunity for speedy recovery, have certainly not been borne out by the operations done in this country. The younger men who are doing a large amount of abdominal work, are the men who are getting the best results,

and the majority of those men are doing all sorts of hysterectomies through the abdominal wall. You hear what Dr. Kelly said. If you go among the younger men in this city, in New York, in Philadelphia, you find them almost unanimous in favor of *cœliotomy*, if you are going to do hysterectomy for any cause. The great fault, it seems to me, as I have seen the hysterectomies done through the abdominal wall, has been the fact that we have attempted to take out these too carefully, and not allowed for the fact that if you will take out the cause you will get as a result a first-rate cicatrix with very little disturbance following, and, it seems to me, as I have seen other men operate, and I know in my own case as well, I have seen a number of cases in which I think if we had been less desirous of making a clean sweep, our results would have been better than they have been.

(To be Continued.)

JANUARY MEETING.

REGULAR meeting, Wednesday, January 23, 1895, Dr. G. H. Washburn in the chair.

VAGINAL HYSTERECTOMY AFTER MARTIN'S METHOD. BY DR. H. A. LOTHROP.

Discussion.

Dr. CUSHING.—I was very sorry that I was called away, so that I could not discuss Dr. Garceau's paper at the last meeting. I have read the paper since and think it an admirable one, as also this one of Dr. Lothrop. The two bring forward in striking contrast the two ways of looking at this question, and it is very hard for one to adopt a judicial attitude and try to draw the line between; and one who

will not take either one side or the other is liable to be disliked by both, like the souls whom Dante found outside the gates of hell, "displeasing to God and his enemies." Now Martin lays down, as he did when I was with him ten years ago, the limitations of the operation. One is the size of the uterus, the other the adhesions; and, in case the uterus is too big or there are too many adhesions, he would prefer to open the abdomen and operate from above. The French, with great ingenuity and great care and great skill, have enlarged the possibilities of vaginal hysterectomy. There is no doubt about that. That all the methods which go under the name of French; and are so quoted by Dr. Garceau, are purely French, I have some doubt. For instance, the

method attributed to Doyen of splitting the uterus into two halves, ten years ago used to be called Fritch's method. Nevertheless the fact remains that the French method is made to include a great deal more than the German method in regard to the possibilities of operating. It is largely a question of personal equation, how a man is used to work, how he likes to work, what he considers fine surgery. To my mind, surgery, to be good surgery, should be sure, should provide against accidents, should show what a man is doing, should let him have a way out of any difficulty that may suddenly occur, and, if possible, must not let any difficulty occur. This can best, in my judgment, be obtained by the abdominal method of operating in difficult cases. I think that the surgery of the abdomen in America now, especially in this matter of *cœliohysterectomy*, has reached a point of perfection which is not surpassed anywhere. I consider that this whole French system of attacking difficult cases through the vagina is wonderful operating, but it is not good surgery. As was said of the charge of the Light Brigade at Balaklava, "*C'est magnifique mais ce n'est pas la guerre.*"

To go into the vagina in a difficult case of *hysterectomy*, the uterus adherent, pelvis more or less bound up with pus-pockets, the whole vaginal roof hard, the uterus and all the tissues ready to bleed on any incision, requires a magnificent dexterity; and it can be done, and done successfully, but, in my humble judgment, it is not the best surgery. That is a matter where I do not wish to dogmatize; I seek light. There is one thing, however, that I can assert with some positiveness,—that the operation by the vagina in a difficult case is a very difficult thing, requiring a very high degree of technique, personal dexterity and good instruments. You cannot go in Boston today and

buy suitable clamps and retractors to do one of these operations for *pyosalpinx* and adherent uterus, such as Dr. Garceau describes. I have done perhaps one hundred vaginal *hysterec-tomies*, more or less. I have had both my bitter and my sweet. I did some of the earliest work, for, in 1887, Martin came and did the first three cases here, and then I began to perform vaginal *hysterectomy*, and I reported in 1888 twenty-one cases with two deaths.

In regard to Dr. Martin's operation: It is a beautiful operation if Martin does it. But if any of you think you can do it as he does it, you have to show a great deal more dexterity than the average man possesses. I do not know a man in Europe who can operate as quickly as Martin does. I once asked his first assistant to show me how Martin tied his ligature, and he told me he could not do it as Martin does it; he has a peculiar twist of his fingers, and is so rapid that it is hard to see how he makes the knot. In regard to these operations of Martin's you will find that something is to be conceded to want of that peculiar dexterity which he possesses. In the first place, few can handle a crooked needle in a needle-holder as he does, and you will find a ligature carrier with the eye at the point is of great advantage. Secondly, it is not necessary to put in these stitches behind. Here is the cervix and you cut behind. As a matter of fact it does not bleed much. If it does bleed, it bleeds then and there, and you can arrest the bleeding in a few seconds with forceps. Next, with the scissors you can run around in front, making the whole incision around through the mucous membrane, and it practically does not bleed. You can then dissect off above as well as below, and can tie off the broad ligaments by putting an aneurism-needle through —Olshausen's operation— and tie off

the broad ligament in a more expeditious way than with a curved needle.

Now comes the great question of clamp or not the clamp. I regard the use of the clamp as simply a concession of want of dexterity in an easy case; in a difficult case a sign of approaching an operation which, as a rule, had better be done through the abdomen. The first case I did I tried to do it *à la* Martin, and I could not get the needle in where I wanted it, and I sent for my ovariectomy set and put on the Wells clamp. The woman recovered and I did twenty-one of these operations, using clamps. When I got to know more I got so as to do it without clamps. I consider that the use of clamps where they are not necessary is an absolute barbarity to a defenceless woman. It is very well to go into an operating room and see a great operator do it and watch him put the clamps on, and you go away and are impressed. There are gentlemen here who saw me remove a uterus in four and a half minutes with clamps, but I would not leave that woman so. The clamps would hurt the woman and she would groan, and the nurses come in and she would complain to them. It takes perhaps half an hour longer to tie off the uterine arteries, tie off the ovarian arteries and bring the vagina properly together.

Now the method of fastening off the broad ligaments is something which has gone through a sort of evolution with me. There are two or three ways to do it. In the first place, you can leave the tubes and ovaries in there, and tie off at the uterine end. That is advisable in some cases where you have removed a cancer in an elderly woman, pretty weak, heart feeble and the disease down in the cervix and not much danger that the tubes will be infected, and time is the essence of the affair. As a rule, however, the tube and ovary should come out. You can get them if you are patient. You can get above them,

transfix the pedicle and put the ligature on. You have then a stump of the ovarian artery with a ligature on it, and that stump can be pulled down but little. You have here the stump of your broad ligament in two or three sections. And you have that on each side. What shall you do with it?

In a case of prolapse, to my mind, the most desirable thing is to pull those stumps as far down as possible and fasten them in the angles of the womb. I do not understand whether Dr. Martin brings all his pedicle entirely outside and fastens without drainage. That has this disadvantage: if you bring this mass into the angle of the womb you bring a great deal of traction on that ligament. It is possible to get this upper part of the ligament into the angle of the womb and secure it. It is secured under pressure, and you see the care the Germans give that the ligament shall not pull out of the angle of the wound. A number of cases are reported where they lost patients from this cause. I lost one. The woman jumped out of bed on the night after the operation and pulled out one of these ligaments into the abdominal cavity; she died septic. Also in tying this off in three masses, and sewing it into the wound in three sections, each makes quite a bunchy mass, and in a week or ten days the exterior part is liable to slough; it is pretty sure to smell, and it really takes away a little from the beauty of the operating to have anything in the house that is going to smell.

The great success with hysterectomy from above leads me to think that the best way to close the wound is the analogue of what we do there, and when we tie this pedicle we do not tie the whole of it in a mass, but we find first the uterine and then the ovarian arteries and tie them without trying to have a bunch of ligatures on the whole of the broad ligament; therefore, what I have

advocated in suitable cases is to let the ovarian artery go, after tying it securely with catgut; let it go back just as you would in the abdominal hysterectomy. I do not know whether I can explain it clearly. But, supposing I am finishing the angle of the wound, my ovarian artery is ligated and released; then I pull down one broad ligament and in that are one or more catgut ligatures. Now I insert one strong stitch in the angle of the vaginal wound, entering the mucous membrane anteriorly, passing through the lower and outer part of the broad ligament, and emerging through mucous membrane posteriorly.

The next stitch entering through the vaginal wall anteriorly passes through the stump of the broad ligament above the ligature on the uterine artery and emerging through the vaginal wall posteriorly anchors the stump of the ligament firmly and yet leaves it covered with mucous membrane. The third stitch goes so high up on the stump of the broad ligament that it passes through the two layers of peritoneum nearly as high as the ligature on the ovarian artery, closing the gap in the peritoneum laterally and covering the internal aspect of the stump with peritoneum. The same process is employed in stitching the stump of the other ligament into the other angle of the wound, nearly closing the incision. I then pass a few other stitches through, taking in each case the peritoneum and the vaginal wall, until I get a straight line of sutures across; but where the central suture would come is an aperture, in which I leave a roll of iodoform gauze after washing out the lower part of the abdomen. It may not be necessary to use drainage at all, but I know there is a large escape of bloody serum during the first few hours. I prefer that it should escape. In nineteen out of twenty cases the peritoneal cavity

will probably absorb that fluid, and in the twentieth case it may not do so; and, if it does not, the woman must die if there is no drainage.

In regard to the propriety of employing this French operation for attacking pus tubes from below, I am yet to be converted. I have not reached the stage of being ultra-conservative and holding to what I have done merely because I have done it, nor because I think my way must be a better way; but I honestly think that a vaginal hysterectomy is not adapted to the average case of pus tubes, although it is an admirable operation for many cases of salpingitis without pus. For such cases I performed this operation twice last week. I removed the uterus for a condition like this. The uterus is turned backwards, the tubes are down behind it, and with the ovaries and the uterus are all glued together. Now that used to be called retroversion with adhesions. It is for such a condition that I venture to say there are a thousand women in Massachusetts being packed with cotton or tortured with pessaries, and it is a miserable practice which takes their money, and amounts to nothing. What to do is the question, whether to fasten the uterus forward to the abdominal wall or not, with or without the removal of the appendages. Practically we find in those cases after the tubes are liberated they are so torn that it is best to remove them. Many now are strongly recommending removing the uterus through the abdomen with the appendages, as the uterus often causes trouble afterwards. In such a case, if you can slip that uterus out from below and remove the appendages also, you have done the prettiest operation you can do, although the most difficult, and the woman is cured. That is not so appropriate in one of those bad pus tube cases, but I would approve of vaginal hysterectomy for adherent retroverted uterus

as well as for cancer, small fibroids, and some cases of procidentia uteri. I have done seven vaginal hysterectomies since the last meeting, so that you see I am not opposed to this operation in suitable cases.

There is yet another class of cases in which I believe in this operation. You have a woman who has pus in the pelvis. She is very ill, has been absorbing it, has chills. In olden times we used to puncture, dilate, wash the cavity out and the woman would get well, but in some of those cases you could not get it all out; the second tube is affected. You do not like to do an abdominal operation; if you do you are liable to lose the woman of shock then and there. You must remove your adherent omentum; dig through between the intestines. The abdominal cavity is overflowed with pus; if then, you also remove the pus tubes, the woman may die in half an hour. In those cases we have a very precious resource either in removing the uterus after the French method, or without removing the uterus just incising from below until we find the pus. We have the uterus in the middle, and we have behind one tube and higher up the second tube; one tube down on the left and the other up on the right. If we just boldly proceed, not by puncture, but drawing the uterus over and cutting and clamping the uterine artery on one side and working in with the fingers, we can get to the abscess and let the pus out, and the woman will do beautifully without removing the uterus.

I therefore would accept vaginal hysterectomy for cases where the pelvis is full of pus and the woman has suffered much. Where the abscess is perceptible from below, and it is not safe to do an abdominal operation, the thing is to reach the pus and to let it out. I have had three cases with Dr. Garceau, and I have tried to adopt as much as I could this method. I was not par-

ticularly happy with one of them. The first was a case of adherent retroversion. That case came out beautifully, and he wanted to show me how to put clamps on; but I had the pleasure of showing him for the first time how to do without clamps. The second was a woman septic, with high temperature. I opened from below and let out a quart and a half of pus. In about a fortnight she was taken with a chill, temperature of 105°; evidently the other tube affected. By good luck I reached and evacuated my pus. I had done enough. We washed it out. The woman has gone out with the stump of the uterus and a bunch as big as a goose's egg in one side, and perfectly happy. I had another case with pus behind the uterus in one tube, and I tried to remove the uterus from below, with Dr. Garceau, and I presume I did not do it right. But I tell this because if I did not do it right, some of the rest of you will get into the same scrape if you try it before you have had much experience. I got part way up and the bleeding was profuse and I decided not to proceed from below, but opened the abdomen. In about three minutes I rolled out my tubes. It was as much as I could do to separate bowel from uterus, even with the advantage of sight. If I had kept on operating from below I should surely have injured the bowel. As the uterine arteries were clamped and the ovarian arteries tied, I had to take that uterus out. I packed the woman with gauze, but she died on the seventh day, apparently septic. I wished I had just opened that abdomen from above and rolled those tubes out in the usual manner. That was a sad experience and has left an unpleasant memory in my hospital. My assistant nurses know good surgery when they see it, and they shudder when the French method of operating for pus tubes is mentioned.

(To be Continued.)

The Obstetrical Society of Philadelphia.

A stated meeting of the Society was held Feb. 7, the President, Dr. F. PARISH, in the chair.

A CASE OF VENTRO-FIXATION OF THE WOMB, FOLLOWED BY PREGNANCY, ILLUSTRATING THE VALUE OF CONSERVATIVE OVARIAN SURGERY. BY FRANK W. TALLEY, INSTRUCTOR IN GYNÆCOLOGY, PHILADELPHIA POLYCLINIC.

THIS case is reported with the view of showing the value of leaving ovarian stroma when possible. A woman twenty-seven years of age was taken ill shortly after confinement five years ago, and, five months afterwards, an abscess opened on the right side of the abdomen, which discharged for more than a year, and then spontaneously closed. The scar remains in the right iliac region near the inferior iliac spine. She had suffered since the birth of her child with malaise and constant pain in the back and right side. The perineum was intact. The uterus was found to be retroflexed and bound down by adhesions posteriorly. She was admitted into the Polyclinic Hospital, April, 1894, and the uterus was freed from the adhesions; on the right side the tube and ovary could not be found, their identity had been destroyed by the tubo-ovarian abscess; the right broad ligament was represented by a fibrous band, which was divided between two ligatures. The uterus was freed, as was also the left tube and ovary. In separating the left ovary from its adhesions a blood cyst was ruptured and there was considerable bleeding from injured ovaria stroma. As the tube was apparently patulous, the injured ovarian tissue was resected and the remainder of the ovary sutured. The uterus was then brought forward and

attached to the lower angle of the abdominal wound by two stitches, which, on being tightened, retained the uterus in anteversion. The patient made a good recovery and was discharged three weeks after the operation. In September she reported and said that she believed herself pregnant. The uterus was somewhat movable. On Jan. 17, 1895, the symptoms of pregnancy were corroborated by examination. The case is interesting, as showing the value of conserving a portion of the ovary, and also as an instance of pregnancy occurring after ventro-fixation.

Dr. JOSEPH PRICE.—The history of this subject, after the enthusiasm of the first few cases had subsided, is that the interest in it has been lost, and it now attracts very little attention. Keith recognized the occurrence of procidentia and less degrees of protrusion of the uterus after some of his ovariectomies, as a result of the use of the clamp. Some of these were double ovariectomies, and, in estimating the effects of the operation, it may be that the relief afforded by fixing the uterus forward was more attributable to the absence of pressure than to the mere fixation. Some of the fixations remaining after abdominal section did not remain fixations. In some of the reported hysterectomies, not even the semblance of a mark was found to show where the sutures had been placed. Take for instance the results in some posterior displacements. He passed a suture directly through the posterior wall of the uterus, and left the womb in place. Some of these remained in the hollow of the sacrum and others resulted in decensus. For some reason, in Philadelphia the results have not been satisfactory. After some of my operations Tait abandoned his first operation. In

the first operation here, the tubes were tied at the two points, one at the uterus, the other about half an inch from the ovary. I applied the second to avoid hæmorrhage in case the first suture came out. This resulted in failure. Wylie followed by fixing the uterus, and this also was followed by failure. Others have been followed by abortion. In two cases where I was requested to fix the uterus, I asked, in case abortion resulted, that I should be exonerated. In one the patient went on to term, and the other at the end of three weeks aborted. Coincidence, however, is not always consequence.

Gynæcologists sometimes operate more than should be done. Pessaries are now under the ban, and yet pessaries are not entirely useless. In simple posterior displacements I find that pessaries are still valuable as they were in the days of Hodge. For instance, only ten days or two weeks ago, I placed several pessaries, and when the patients returned to my office I found the uterus half a circle from the place in which it was when I introduced the pessaries. Several years ago a husband and wife entered my office, and the wife was in a weak, nervous state, fearing that she would injure her husband and fail in the duties of life, and was despondent. Her uterus was very tender and was pressing upon the sacral plexus of nerves. This woman was put in the knee-elbow position and kept there until the uterus was in better position, and it was held there with a pessary. In less than a month that woman returned to my office and thanked me for the relief she had obtained. The pessary, therefore, is good in cases that otherwise would be subjected to ventro-fixation. At the same time, in proper cases, I approve of abdominal surgery most thoroughly.

I am glad that a case of this character has been reported. Many times on the operating table, after shelling

out the ovaries in cases of abscess, I have insisted that there are women walking about the streets without ovaries. I have now such a case at Atlantic City suffering from fibroids. I advised operation and I failed absolutely to find either tube or ovary on the offending side. Only yesterday. I found a suppurating ovary on the right side, and a hole in the sigmoid into which I could introduce my finger, and the tube and ovary absent. There are cases, therefore, where ovaries are absent without a section.

Some years ago some one proposed fixation of the uterus in the hollow of the sacrum, after removal of the appendages, and placing a tube in the vagina to support the uterus; but the treatment of that particular German was not adopted by any other operator.

I would like to see a record of the abortions after these ventro-fixations; they certainly occur in a great many cases. The earlier operations done in Philadelphia were not successes.

Dr. ROBERT P. HARRIS.—I would like to ask the experience of Dr. Drysdale as to the fixation of the uterus to the abdominal wall after hysterectomy. Where the uterus is fixed to the abdomen the tendency is to produce barrenness. In cases where the uterus is fixed by puerperal peritonitis, it is fixed much higher up than after ordinary operations for ventro-fixation. In Mrs. Reybold's case there were two operations. In the first the uterus was attached to the abdominal wall, and I found the uterus, after death, about four inches. This was fifty years after the operation. This woman became barren at 28 years of age; she had only one child after the operation. There was no question of progressive sterility. I saw a woman some years ago in whom the uterus had been fixed by one cornu by a clamp operation, and she menstruated through the abdomi-

nal wound. The uterus was irregularly developed during pregnancy and there were irregular contractions during parturition. She died undelivered. I knew of several cases in Philadelphia of fixation in which there was no trouble. One was a case, Dr. Washington Atlee's, and she had three sons and three daughters afterwards. I would like to know Dr. Drysdale's experience in such cases where the uterus is firmly fixed by the old method of clamping, and where both ovaries have been removed. Of course there is no trouble about pregnancy, but where only one ovary is removed I have seen pregnancy result without any trouble. Dr. Parish will recall a case in which I made a ventro-fixation unintentionally in removing a dermoid cyst. This woman became pregnant and had no trouble in her delivery. The case was a desperate one, but ventro-fixation in that way is very different from what the doctor speaks of.

Dr. JOSEPH PRICE.—Dr. Harris, as I understand him, has called our attention to the subject of sterility following some cases of ventro-fixation, either of inflammatory or operative origin. I would like to call Dr. Harris' attention to the fact that repeated pregnancies have occurred. Take for instance Leopold's series of Cæsarian sections. In all cases of Cæsarian section there have been ventro-fixation from resulting peritonitis. And I have insisted upon the fact that it is the ventro-fixation which saves the life of the patient. The adhesion of the uterus to the anterior wall of the abdomen prevents a general conflagration. In Dr. Noble's case and in Dr. Kelley's patient, the uterus was fixed by sinuses, through which the whole progress of the labor could be watched through the anterior wall, only requiring enlargement of the sinus. In another case, Dr. Wilson's, there were five or more sinuses; Dr. Lusk's case also

had them. The number of cases is not small. It also depends upon the kind of woman, as some are more prone to conceive than others. The fact is that the fixed uterus is liable to become pregnant, but this is not the rule. It is also a fact that a stationary and rigid position of the uterus produces unfavorable presentation of the child.

Dr. HARRIS.—The fact I referred to was that the woman stopped bearing children at the age of 28, after her second pregnancy.

Dr. TALLEY.—It was not my purpose to call up a discussion on ventro-fixation. It was simply my intention to report a case which contained the interesting fact that a girl who had lost a portion of an ovary had become pregnant through the portion which had been left. As regards ventro-fixation, I have had a number of cases in the past three years and find the results very satisfactory. This girl I referred to is in her tenth week of pregnancy, but is doing very well, and I can see no greater reason why she should abort from the ventro-fixation, which rather loosely attaches the uterus in its normal position, than that she should with the uterus firmly fixed in an abnormal position, as it was before coming into my hands.

A REPORT OF AN OPERATION FOR
ECTOPIC GESTATION. BY DR. A.
H. HALBERSTADT, OF POTTSVILLE.
[READ BY DR. W. H. PARISH].

Mrs. G., December 29, 1894, entered upon a supposed normal labor at full term; she had borne five children previously. An abdominal pregnancy was recognized. During the early portion of gestation the tumor was supposed by the attendants to be a fibroid growth, being developed on the right side of the pelvis, and the fact of pregnancy was not then ascertained. The suffering

was so great that morphine was given hypodermically by Dr. Halberstadt, which afforded relief. The patient was much better the next day; the foetal heart could not be heard, the child was supposed to have perished the preceding day. On the fourth day, the woman was found in collapse and Dr. H. opened the abdomen in the median line, by an incision of six inches, and the foetal surface of the placenta appeared under the membranes. The liquor amnii was drawn off by the trocar and a ten-pound child was extracted. The degenerated placenta was detached to about one-third of its extent; the hæmorrhage was controlled by flushing with hot water. As the placenta appeared loose, about one half was torn free from its attachments in front and posteriority. Iodoform gauze was packed in the cavity and hypodermic injections of whiskey given, but without avail, and the patient died without reaction. Possibly the depressing effect of the ether may have contributed to this result. No post-mortem was made.

Discussion.

DR. J. PRICE.—This is the second case of Dr. Halberstadt's in twenty-five years. The first case was a perfectly hopeless one; this was not a hopeless one: the patient was lost through delay. This is the case all through the country. The doctor saw the case in spurious labor and before the rupture and hæmorrhage. He might have saved the woman by early operation without morphine. I also think that the free use of very hot water was a mistake; it contributes to shock. Then the removal of the placenta was another mistake. Exceptionally few placentas have been removed safely from the uterus and surrounding organs and tissues; in fact a man knows very little about hæmorrhage until he tries to remove a pla-

centa from the surrounding organs. Dr. McMurtrie, of Louisville, on the twenty-first day after the removal of the child, attempted to take away the placenta from the posterior surface of the uterus and broad ligaments and had a shocking hæmorrhage. Failing to check it by other means, he delivered the uterus and applied a couple of strong ligatures to the neck and removed it and saved the patient. He could not have saved her if the placental attachments had been behind the uterine body. In spurious labors, if we wait until rupture occurs, the woman will be likely to perish from bleeding, and but few cases will be saved by the separation of the growing living placenta. About all the cases except Martin's, Jessup's and a few others were lost.

DR. HARRIS.—In his last report there were twenty-eight cases in all in which the children lived.

DR. PRICE.—I am glad to hear it, but in those cases the work has been partial and the spot was at once hermetically sealed. There may be an error of record, as there is nothing to warrant the correctness of this group of cases.

DR. PARISH.—With regard to the causes of death, I think that the condition of the patient at the time of operation determines the result. In correspondence with Dr. Halberstadt, he states the following facts: The patient was passing into a decided collapse, with pulse of 150, face pale and clammy, general surface cool, and she had cramps and vomiting—all these showing that the woman would have died without any question of loss of blood without an operation. There was not much blood lost during the operation and the temperature of the water was not extreme, he says, "not too hot for the hand." I believe that Dr. Halberstadt thinks that he might have saved the patient had he been allowed to operate on the day he first saw her. He followed

the usual plan of giving morphine and of waiting for several months until the placental circulation was less active. I would like to correct one statement of Dr. Price: this is Dr. Halberstadt's second case, but first operation at the full period of ectopic pregnancy.

Dr. BALDY. — Perhaps the reason why the patient did not lose much blood during the operation was because she had lost it all before the operation.

Dr. J. PRICE. — The statement that the water was as hot as the hand could bear is not satisfactory; the temperature should be determined accurately with a thermometer. Of course the woman was dying at the time of operation and there could not be much hæmorrhage.

A communication from Dr. W. J. Smyly, of Dublin, was read by the secretary, in which the writer took exception to some criticisms made by Dr. Joseph Price at a former meeting of the society, on the practice of the Rotunda Hospital with regard to the use of the curette. Dr. Smyly, reviewed, said that he had to go back a number of years to find the cases referred to, and that the criticism did not apply to the present practice of the hospital.

Discussion.

Dr. JOSEPH PRICE. — Either the original report of the Rotunda Hospital is false in its statements or this communication is incorrect. It would give me very great pleasure to correct any statement of mine which I learned was incorrect, and I am sure that I would not like to do injury to such an institution as the Rotunda Hospital. But Dr. Smyly does not deny that 105 cases is correct, and the fact that the curette was used in 105 cases shows that there is something wrong in the maternity work. This amounts to about ten per cent., and

probably more. In over 1400 cases at the Preston Retreat, not to speak of the thousands of cases in my individual practice, I have not resorted to the curette nor lost a case. I think, therefore, that the writer of the communication shows super-sensitiveness in his comments on my statements.

Dr. Joseph Price presented a photograph of a large cystoma in a Chinese woman and read reports of cases with specimens. The weight of the cyst removed from the Chinese woman was 6½ pounds. The first case reported by Dr. Price from his own practice was one of tubal pregnancy, in which rupture took place last August; the patient was in bed with a resulting abscess for about six months and came to Philadelphia for the removal of the small tumor remaining. There was found adhesions, which were universal and strong, and enucleation was followed by great shock. Drainage was kept up for two days; on the third there were symptoms of nervous shock and collapse developed. With the aid of strychnine, digitalis and heat to the extremities, this was overcome and the patient returned home perfectly well. This is the fourth case of ruptured sac that Dr. Price has seen lately. Those cases of ruptured tubal pregnancy with suppuration of the sac are not usually favorable for surgical procedure.

The second case was brought into the hospital in a collapse, from a physician who sends Dr. Price ten or twelve cases yearly for several years, and who has had five cases in one month. When admitted, the present case was in such condition that operation could not be thought of until reaction set in. Section was made the next day with removal of the tube and ovary. Recovery was uninterrupted. As regards the site of the rupture, nearly all the ruptures take place near the uterus, and the nearer these ruptures approximate

the uterus you will find more bleeding and more deaths. The uterus is not appreciably increased in size. I always look for the fœtus and generally succeed in finding it, although it is often mistaken for a clot and washed out in flushing the peritoneal cavity.

The third case was a woman, who had borne six children; the last was borne six months ago. Her menses were regular; there was no history of a forming tumor. It was supposed to be a case of appendicitis. She had extreme pain and tenderness. On operating she was found to have a cæcum and appendix firmly adherent to a pelvic tumor. The patient complained so much of pain and extreme tenderness that she would not allow manipulations to be made, so that examination had been superficial, or I should have recognized the growth and have suspected a twisted pedicle. (Specimen exhibited.) Here are two twists in the pedicle. On opening the abdomen, this looked very much like a double pregnancy ruptured. I freed all the adhesions and pelvic attachments of this growth, and she did beautifully.

The fourth patient recently had an increased flow of menstrual fluid. She was a very thin, colored woman. In section a multinodular fibroid was found. A Kœberle was applied and she recovered without a ripple. A tedious convalescence is not an objection if the recovery is uninterrupted. Of course where the kidneys are bad, the operator may lose his case without the operation being at fault. Very often bad results are caused by delay in operating. For instance, he recently removed a tumor which, had it not been for the miserliness of the husband, should have been removed years ago. The delay in operating was fatal, and it is owing to this that much of the mortality in cystoma is attributable. It is amazing that a woman, as in a case brought in this

afternoon, can be allowed to carry around a tumor for four years, in a city where there are so many opportunities for having it removed as there are in Philadelphia. The early operations, as have been frequently stated before this society in past years, yield the best results. Delay is dangerous.

Dr. ARCHIBALD MACLAREN of St. Paul, Minn., sent a communication upon the best method of sterilization of catgut for surgical uses. He uses only the best banjo strings. The strings were wrapped in wax paper to prevent their becoming dry and brittle, and were then sealed in paper envelopes and placed in a Bœckmann sterilizer, and brought to a temperature of 284° F. dry heat. The envelopes are not to be opened until used for the operation, and are very convenient for carrying about. This method had been used for several months and the ligatures were perfectly sterile and the results satisfactorily.

Dr. W. H. PARISH exhibited and explained the Bœckmann sterilizer, by which either dry or moist heat can be obtained for sterilizing dressings, etc., previous to operations.

Discussion.

Dr. GEO. J. MCKELWAY.—Before sterilizing catgut we must get rid of its fat, which is principally suet. The best solvent is benzine. I put the catgut in a wide-mouthed bottle and fill it up with benzine, which is poured off at the end of 24 hours: this is repeated three times. After the catgut goes into the bottle it is not touched until taken out for the operation. It is then soaked for four or five hours in bi-chloride solution (1-500). The paper speaks of the difficulty of getting to the interior of heavy catgut. Of course you can't get any fluid to penetrate the ligature when it is already saturated with suet. You must first get rid of

the fat by the use of benzine. If the catgut be left in the bi-chloride solution it will rot in a very short time; after soaking for a short time it is followed by absolute alcohol, and it is then ready for use. This method is neither expensive nor troublesome.

Dr. J. PRICE.—Where suppuration occurs after operation it is not so much due to the quality of the ligatures used as it is to their size. When several turns of heavy ligature are applied, the spool of ligature is bound to come away and give rise to a sinus. Catgut as a material for ligatures has been generally condemned, and justly so, for a number of reasons. It is not only on account of the difficulty in sterilization, but because it is not a good surgical material. It is not a good protection, and only serves to hold for a short time; but this is just what is the matter where hemostasis is concerned. The very smallest Chinese silk ligature can be tied with a knot which does not slip and will hold indefinitely and does not cause sinuses. For this reason I prefer it to catgut. There is a difference between catgut ligatures and strings for musical instruments, because the latter are hand-made. I made a number of experiments some years ago and still have a number of fiddle-strings which I bought for this purpose. I have used it in some cases, which have gone to their graves in consequence. There is not a surgeon in the country who has not lost cases from this cause. Some years ago some one returned from Germany and read a paper advocating the use of catgut ligatures. One of my students afterwards went West, and in his first operation the patient bled to death from the use of catgut ligatures—a perfectly favorable case lost by hæmorrhage. In Milwaukee last year, just such a discussion took place and a prominent operator reported four consecutive cases lost

from the use of catgut. He denounced its use and said it should be banished from the face of the earth. He occupies a position in one of the prominent institutions of the country and is in favor of antiseptic surgery. A New York man defended catgut and said that he used it in all his operations. One of my students afterwards went to New York and saw one of his operations, a favorable one in every way, and he lost the patient from hæmorrhage from the use of catgut. For my part I do not see why they use it. Catgut cannot be used with safety for a large vascular pedicle; and undue amount of ligature and an increased number of turns are employed to secure the vessels, and, as stated before, this is likely to cause suppuration, even if the patient does not perish from hæmorrhage. It is necessary, therefore, to call a halt in the recording of cases and advocacy of treatment without sufficient experiences. It is necessary in a society of this kind to speak plainly. It is one thing to say that catgut may be safely used in the hands of some city surgeon and quite another to advocate its use by a man in the country who has very few facilities. It is better to use a material that can be sterilized simply by boiling and can be prepared by anyone who can get a shaving-cup or anything that will allow it to be boiled in.

An article was read from Dr. George Coromilas, Calamata, of Greece, on

THE ACTION OF QUININE UPON THE INTERNAL GENITAL ORGANS DURING PREGNANCY AND MENSTRUATION.

The author claimed a specific action for quinine upon the female reproductive organs, in favoring regular ovarian activity and menstruation and in preventing abortions. The paper advised, however, that it should be used very cautiously in pregnant women.

Societe Anatomique de Paris.*

MEETING OF NOV. 30, 1894.

Dr. BROCA, President, in the chair.

RIGHT-SIDED CEREBRAL TUMOR IN A WOMAN SEVEN AND A HALF MONTHS PREGNANT, SIMULATING A TUBERCULAR MENINGITIS—CÆSAREAN OPERATION—DEATH OF MOTHER—CHILD ALIVE. BY DR. O. MACE.

The woman was brought to the hospital on May 20, 1894. The people who came with her said that she had a convulsion, but of this they had no exact information.

On arrival, the patient was found in a semi-coma, lying on her back and indifferent to all that took place around her. She did not even open her eyes when I came to her.

It was found that she had involuntarily voided her urine. No œdema of the legs or ankles. The abdomen was enlarged to about the size of a seven and a half or eight months pregnancy. A hand placed on the abdomen could feel active movements of the child. Auscultation revealed the foetal heart sounds, which were of good quality, were low down on the left, a few fingers' breadths from the median line.

The pulse was good, full, regular, eighty beats to the minute. Heart sounds of the mother clear; no *bruit de galop*. On uncovering the thorax, a recent cicatrix was found, similar to one produced by suppuration of the first sternal bone. This cicatrix presented numerous raised bands and covered a surface of from four to five centimetres in diameter.

Nothing to note in the lungs. A careful auscultation of the apex of

both did not reveal the slightest trace of tuberculosis. There was a slight difference in the size of the pupils, the left being the larger.

By much questioning and trying to get the patient out of her torpor by irritating her skin, we at last were able to find out that she was suffering from severe headache, especially sharp in the right frontal and orbital regions, and painful cramps in the lower extremities. She then fell into coma. Temperature on the evening of the 20th, 36.5° C.; on the morning of the 21st, 36.8°

In presence of such a state of things, it appeared as if urinalysis would give some indications. I passed a catheter, withdrawing a little urine, but sufficient to demonstrate the absence of albumen. An eclampsia without albumen or a tubercular meningitis seemed probable, and placing myself in this or the other alternative I ordered a brisk cathartic and milk diet.

In the evening the patient went to stool; she continued to pass her urine in bed and still complained of headache. Vaginal examinations showed no sign of labor; the cervix was long and permeable, as in multipara. Uterine contractions were few and painless, or at least the patient did not complain of them. Foetal heart beats were good. Temperature, 37.3°. The patient had vomited, however; the matter was a brownish gray, similar to the vomit of uremia, the quantity being about 500 grammes. A patient near by said that the vomiting was most easily effected, the patient showing no effort in the act. This fact looked like the regurgitation of meningitis.

On account of the uncertainty of the diagnosis, I ordered vaginal in-

* NOTE. — Only subjects relating to gynaecology and pædiatry are here reported.

jections and a dressing to be placed over the vulva.

On the following day the temperature was 37.4° in the morning; the patient had vomited several times since the evening visit. The matter vomited had once been greenish in color; the general weakness was the same. Patient still complained of headache and that light hurt her a little. Evening temperature, 37.3° .

May 23, morning temperature 37° , same condition, the face thinner. The nurse had not noticed any grinding of the teeth or convulsive points; the patient was still calm and drank without much complaint. The pulse presented more precise indications, for in the interval of a quarter of an hour I counted first 116 and then 56 pulsations per minute; they were small and regular. From this time I did not find such a great difference in the number of beats, and up to death the patient had a weak, small regular pulse, between 56 and 64 beats. The general condition remained the same, while the face became gradually thinner. Several times I was able to obtain samples of the urine, which never showed a trace of albumen.

Action of the bowels could not be produced by simple or glycerine enemas. A purgative enema was of no avail and was thrown out without any fecal matter. The diagnosis was no longer doubtful: it was in this case a localization in the meninges, most probably of tubercular nature. The bony cicatrix adherent to the membranes that I had remarked permitted this diagnosis with considerable chance of exactness.

Nothing special was noted from May 23d to the morning of the 27th, when the patient would not answer at all. Temperature 36.7° ; respiration calm; prostration gaining ground and nearly complete. At noon the patient was on her back, the eyes half closed, the mouth open. Same

condition during the afternoon; pulse small, slow and regular.

Fœtal heart still good, and fearing a soon-coming ictus, I ordered a knife and a few pairs of artery forceps to be prepared in order to perform the Cæsarean operation at the right time. At seven in the evening I introduced, without any difficulty, a Champetier bag, into which a litre of a solution of sublimate was introduced, bringing it well in contact with the cervix.

At a quarter past nine the face of the patient became very congested, respiration was almost gone, inspirations were superficial and only six to eight per minute. The lips and chin were covered with froth; coma complete. This aggravation of the symptoms was very sudden. The night nurse, when calling me, feared that the patient would be dead before I arrived. I found, however, in this condition the respiration was still slower, as was also the pulse, which was nearly gone. When the respirations had nearly ceased I emptied Champetier's bag without accident, and performed the Cæsarean operation. Incision of the uterus gave hardly any blood and I did not come in contact with the placenta, which, as I found later, was situated high up on the left. I extracted a pale child and applied an artery forceps to the cord for the time being. A few insufflations and flagellations provoked respiration; the child was put into a hot bath with cold affusions, began to cry and breathe regularly.

During this time the mother had one inspiration. I extracted the placenta, and, while I put in a few temporary sutures, I found out that the Champetier bag had only made a slight mechanical dilatation. After extraction of the placenta, the uterus did not contract, but did not bleed. The patient died without having lost a drop of blood, while the operation had not lasted three minutes.

The child, a boy, weighed 1900 grammes, was well formed and put into a couveuse, where he remained for a month and a half. He was first nursed on the breast and then on the bottle. He is now well, only having had a diarrhoea, from which he recovered.

Autopsy.—Nothing in the lungs or heart. Abdominal organs normal, excepting the liver, which presented on the anterior surface slightly developed fibrous bands, especially on the right, uniting it to the diaphragm. Two spots of cicatricial tissue on the anterior aspect made one think of a syphilitic lesion. From one of these cicatrices a fibrous band of two or three centimetres shot off, terminating around a small grayish white node the size of a small pea.

In the *brain*, at the level of the median plane on the right side, a tumor the size of a pigeon's egg was found. It was soft in some places and filled the anterior portion of the middle plane. The consistency of the tumor was variable; in some spots it was soft, fluctuant and diffuent, while in others it was hard. The first thought was that it was a cerebral gumma of syphilitic nature in a subject having a suspicious looking liver and a cutaneous cicatrix over the sternum, which might have been a sub-cutaneous gumma. Sections of the liver and tumor made by my friend Dr. Bolognèsi and myself gave the following results: The tumor was a pure sarcoma. It was a very vascular growth, with vessels of new formation. Groups of embryonic cells were found in the midst of the brain substance, as well as disseminated throughout the cerebral tissue.

The Liver.—Cicatricial fibrous tissue. Intra and perilobar bands of fibrous tissue. A few obliterations of the vessels, and some of the latter were surrounded by fibrous tissue. Syphilis not very probable. This was

also the opinion of Professor Cornil when he examined the specimens.

TWO CASES OF MECKEL'S DIVERTICULUM. BY DR. BRINDEAU.

CASE I.—Mrs. X., aged 25, primipara, no syphilis, no complications during pregnancy. The patient was delivered at eight months and a half of a well formed child weighing 2300 grammes. The child died at the end of eight days, of congenital weakness.

Autopsy.—Annexed to the small intestine a diverticulum was found. It was about the size of the small intestine, and directed from above downwards, its summit looking upwards. Its width was two centimetres and a half; it was perfectly free and had no mesentery attached to it. Its intestinal end communicated freely with the intestine; the free extremity was completely closed. The diverticulum was slightly irregular and terminated by two little cul-de-sacs, one of which was parallel to the axis of, the other perpendicular to, the diverticulum, the latter being situated at 30 centimetres above the cæcum.

CASE II.—Woman aged 22, housewife, primipara, no syphilitic history; last menses on March 25, 1894. No history of disease or traumatism during pregnancy. Labor began Nov. 10, at half-past eleven in the evening. At two o'clock in the morning the nurse informed me that the child was *freely passing its meconium*. The heart sounds were good, and the child was rapidly expelled. It was a well-formed girl weighing 1800 grammes; breathing was quickly established. As I was about to tie the cord, I found that there existed a stercoral fistula, situated at about one centimetre from the borders of the umbilicus, and large enough to allow the introduction of a pen-holder. Its orifice was bordered by a red ring, formed by intestinal mucous membrane. The cord was rather greasy

and presented some diverticuli containing only mucous tissue and no vessels. The cord was tied off two centimetres above the fistula, and while doing this the meconium was seen to come away abundantly from the fistula. Rectal catheterism was easily practiced with a rubber sound, showing that there was no stricture. The child was carefully watched and expelled her meconium through the fistula, while on the following day the meconium was replaced by fecal matter. Hardly any feces were rendered by the anus.

On the third day the cord began to wither and the mucous membrane of the fistula commenced to bleed easily. The child died on the fourth day. Since birth she had lost 300 grammes in weight.

Autopsy done the next morning. The cord had not yet fallen and the hernia was still covered by its amniotic envelope. On opening the abdomen, care was taken to go well around the umbilicus. The small intestine was moderately distended by the feces, while the larger intestine was very contracted. Both ends of the intestine going to the umbilicus were formed by the small intestine. The upper end was distended, the lower one retracted. At the umbilical ring they were placed against each other like gun barrels. By dissection of the preparations, the following was noted: The fistula was about 22 centimetres above the cæcum, and formed by an intestinal diverticulum opening into the cavity of the child. This diverti-

culum was two millimetres long by five in width; its free end was bordered by a collar of intestinal mucous membrane. Its internal extremity continued with the upper end of the intestine. This fistula produced, in about the same way, the effect of an artificial anus. Both ends of intestine were in contact like gun barrels and penetrated into the ring; the upper end continued directly with the diverticulum and the lower end was compressed by the upper, which fact explains why the greater part of fecal matter came away by the diverticulum.

Reflexions.—Both cases are interesting, (1) from the *origin* of Meckel's diverticulum; (2) from the *position* of this diverticulum, placed at 20 to 30 centimetres above the cæcum; (3) from the *manner of the production of the fistula*. In this case it was not due to the ligature of the cord, since the fistula did not open into the amniotic fluid before birth; (4) from the *degree*. The first case it was in the cord itself; in the second it entered the abdominal cavity. (5) On account of the *treatment*. Should an operation have been performed on the fistula?

I think that in the second case, given the congenital weakness of the child, it was better to have waited at least until the weight had attained that of a full-term child. Radical cure would have been difficult, because both ends penetrated into the umbilical ring, and it would have been necessary to free them before closing the diverticulum.

DECEMBER MEETING.

Prof. Cornil, president, in the chair.

A LARGE POLYPUS OF THE RECTUM, EXPELLED DURING DEFECTION, IN A GIRL AGED 22. BY DR. ALBERT MOUCHET.

The tumor that I have the honor of presenting to this society was ex-

pelled during defecation by a 22 year old girl that was under my father's treatment. As is seen, it is a rectal polypus, about the size of a small orange, round in shape, the surface dimpled. Microscopical examination made by Dr. Macaigue and myself showed the growth to be an *adenoma*.

In each section the general aspect was that of a bouquet, a central stem supporting a multitude of ramifications forming alveolæ by their intermingling. The stem was made up of connective tissue enclosing a few connective tissue cells, but especially slightly undulated connective tissue fibres, in the midst of which we thought that we could recognize the long nuclei of muscular fibres. The alveolar body is made up of thin tracts of connective tissue, containing here and there embryonal cells, and quite vascular. In the deep parts, especially in the neighborhood of the central stem, the alveolæ are occupied by glandular cul-de-sacs, cut perpendicularly or more or less obliquely. The epithelium of these cul-de-sacs is that of the normal cylindrical type, but without showing any tendency to proliferate into the glandular cavities. The latter, retracted probably by the alcohol, have hardly any cavity. At the periphery, an embryonal layer of infiltration is seen, with occasional capillary dilatations and glandular cavities, some opening at the surface, like Lieberkuhn's glands. At the surface of the tumor, a poorly colored, amorphous zone is perceived.

It is, as is seen, an adenoma. The circumstances of its development and expulsion appeared to me interesting enough to bring it to your attention, and here are the notes that my father gave me regarding the case.

Miss X., menstruated regularly and was perfectly well up to nineteen months ago, when various hysterical symptoms appeared, left hemianæsthesia, diminution of the visual field, pharyngeal anæsthesia, troubles of the digestion and obstinate constipation. The patient complained constantly of a pain in the left iliac fossa, which was attributed to neuralgia of the ovary. She remained in bed for fourteen months and only

commenced to improve during the past five months. The abdominal pains increased at the time of constipation, which was most disagreeable. Several times the patient thought that the feces pushed something down before them, like a bunch of hæmorrhoids, which returned spontaneously after they had been expelled. One day while at stool, after many efforts, she cried out, saying, "Something has come away from my body," and at the same time a jet of blood covered the bed. Being sent for I found a fleshy mass adherent to the rectum by a pedicle and easily recognized a polypus of the rectum inserted at the posterior wall, which was protruding. Around the polypus were grouped a quantity of sessile polypoid granulations. The pedicle was ligated and the other small polypi were removed with the scissors and nail. Reduction of rectum after irrigation with a solution of carbolic acid. Recovery rapid; the constipation and abdominal pains quickly disappeared.

FIBROMA OF THE BROAD LIGAMENT.

BY DRS. FUNCK AND ROBINEAU.

The patient, aged 38, was in Dr. Nelaton's service at the Hôpital Tenon. This woman had always menstruated regularly and had never shown any functional symptoms in relation to the enormous abdominal tumor which rendered walking difficult. Palpation, percussion and vaginal examination, showed that the tumor extended from the xyphoid appendix to Douglas' cul-de-sac. Operation was quite easy and presented nothing particular to note, excepting an adhesion behind with a coil of intestine. The uterus being adherent was cut off above the cervix, the latter being drawn up and sutured to the inferior lips of the wound. The left adnexa were

removed. The right ovary, which was cystic and the size of an orange, was adherent to the tumor.

Examination of the specimens showed that it was a fibroid.

REVIEW OF GYNÆCOLOGY.

(All Exchanges and Books for Review should be sent to DR. C. G. CUMSTON, 826 Beacon St., Boston.)

MESSAGE IN GYNÆCOLOGY. By O. C. MAYER, M. D.

No branch of medicine has made such rapid advance in a comparatively short space of time as gynæcology. Though ovariectomy had been performed successfully for more than seventy years, it was not until the publication of Marion-Sims' work on "Uterine Surgery," some thirty years ago, that diseases of women forced a recognition from the medical world as a separate branch of medicine. From that time on, gynæcology has, as it were, leaped full-grown into existence. New operations and methods of operations were successfully tried, improvement followed upon improvement, and operative gynæcology became a source of admiration to the profession as well as to those whose lives have been relieved, by the surgeon's knife of manifold burdens.

But while there is so much light, there is much darkness. How many ovaries, how many wombs have been sacrificed, how many women have been made sterile, to satisfy this *furor operativus*. While one mutilating operation was thus succeeding another, very little thought until of late years was given to the manner of preserving the generative organs by more conservative treatment, and of bringing about restoration without intervention of surgical procedures.

The indisputable merit of having given to the medical profession a therapeutic agent to successfully combat many uterine and ovarian disorders belongs to Thure Brandt, of Stockholm. Since his publications on "Massage in Gynæcology," the foremost gynæcologists have tried this method of treatment, have expressed themselves as fully coinciding in all that is claimed for it, and have pronounced it valuable as rendering unnecessary, in very many cases, operative interference. The object of uterine massage is to bring about a healthier state of the circulation and to impart *tonus* to the various structures of the genital tract. It is indicated in all disorders due to chronic inflammation, as well as in such diseases as cause uterine displacements, produced by relaxation of the ligaments, or by pelvic exudations, with or without adhesions.

Before describing the technique of massage, I will mention some of the general directions to be observed. The patient should be placed in the usual position, on her back with legs well drawn up, as is customary in gynæcologic examination. Antisepsis should be observed as in gynæcology or obstetrical work. As massage in the beginning of the treatment is somewhat painful to most patients, it should be given gently, and the force should be gradually increased; it will thus be borne

even by sensitive women, especially if the physician encourages them. To reduce the pain caused by the hand (particularly in nulliparæ) on the abdominal parietes, it is well to apply oil or some vaselin. The most important thing of all is certainly a correct diagnosis of the disease and the exclusion of all pyogenic disorders such as pyo-salpingitis, ovarian abscess, etc.

Massage in pelvic disorders is divided into the external, internal and combined methods. The latter is almost exclusively used. Four different kinds of massage may be used:—

1. Effleurage (rubbing).
2. Petrissage (kneading).
3. Pressure with drawing.
4. Lifting—stretching.

1. *Effleurage* is the mildest form, and alone is rarely used, as it is included in the second form of massage, viz.:—

2. *Kneading*.—This is a manipulation carried out as follows: The diseased parts are taken between the fingers of the inner and outer hand and are rubbed, pressed, squeezed, kneaded; to be sure this is not so easily done as said. It must be done in such a manner that the patient will not object to further treatment, and thus be deprived of its benefit. *Internally*, it is, in most cases, an easy matter to reach the diseased spot with the finger; but *externally*, unless the uterus itself is to be masséed, it is often very difficult. By slowly and gently pushing the abdominal parietes inwardly must we try to reach the parts, constantly inducing the patient to relax the abdominal muscles. When thus the parts are distinctly felt between the fingers, the inner hand is mainly used as a point of support, while the external hand manipulates the parts. Kneading is the typical form of massage for

chronic thickened exudation and hæmorrhagic infiltration of the cellular tissue of the pelvis. In those cases the fingers in the vagina can reach the parts more easily and can work with more force, but unless the diseased parts are firmly held between the fingers, the external hand would be a poor counter prop, and the result will be unsatisfactory. The amount of pressure used at first when the parts thus held are between the fingers, should not exceed that which is necessary to mash a cooked potato between the index and middle fingers of one hand and the tips of the four fingers of the other hand. Gradually the pressure may be increased in the succeeding sittings. The first few sittings should last only a few minutes, rarely exceeding five minutes. Later on, the time may be increased to ten and fifteen minutes. During the first few days, it is advisable to keep the patient quiet in bed, if possible, and the temperature should be carefully observed. The kneading must be commenced from the circumference of the exudation. Often the uterus must be pushed to one side in order that the hand used externally may reach the deeper parts of the parametria. In special cases it may be necessary to displace the uterus downward by means of a volsella forceps in the hands of a nurse or an assistant. If such a procedure is necessary, utmost care must be observed that the patient remain in bed, especially if there is any suspicion that the peritoneum is in relation with the diseased parts. Less apprehension is to be entertained in the application of

3. *Pressure with Drawing*.—This form of massage is used almost exclusively in gynæcology. It is a combination of pulling and pressure, and, as in *kneading*, the parts are taken between the fingers of the

inner and outer hand. This is more difficult, as the object is generally smaller, but at the same time it is easier, as it gives the patient less pain. The inner hand fixes the part, and the outer hand presses and draws with moderate force, not letting the part slip back, but gently allowing it to glide back under constant equal pressure. This is repeated eight or ten times at first, increasing to twenty times at subsequent treatments. After every three or four manipulations, a short intermission is allowed without releasing the pressure. This form of massage is the most effective in old adhesions, and when old inflammatory products exist in the cellular tissue of the pelvis, as well as in the parametria. The direction in which to pull is usually from the uterus toward the large vessels, or *vice versa* if the uterus is to be included in active massage. The effect of this form of massage, which is a pulling with a certain amount of contra-pressure, is that stiff and fixed masses of connective tissue are thereby made elastic, and that through continued stretching changes take place in the vascular supply tending to stimulate absorption. Most typically is this observed in retroversion and retroflexion of the uterus caused by contractions of the cicatricial tissues in the parametria. These cases are seemingly cured in a very short period without the aid of a pessary; but the disorder will return if treatment be suspended at too early a period; the contraction will recur and cause uterine displacement. It is therefore necessary to continue **massage** until the cellular tissue has become perfectly movable and free from infiltrations for some three or four weeks after the exudations were apparently sensible to the touch. In connection with this treatment it is necessary to observe that the sur-

rounding parts be stimulated to exert an influence toward more healthful circulation, by either extended massage, or other treatment, such as hot injections, baths, tampons, medicated with glycerin or ichthyol-glycerin, etc.

4. *Lifting or Stretching*—makes the greatest possible use of the elasticity peculiar to the pelvic organs. If the ligaments be in a relaxed state, the fundus may be raised as high as the umbilicus.

Besides active massage, some authors highly recommend passive massage, especially for patients who through lack of time are able to take only two or three treatments in a week, and in cases where a beneficial result is observed under this treatment. Passive massage results from the introduction into the vagina of Bozeman's vaginal ball dilators. Just how it acts is unexplained, but its beneficial influence can be observed more especially in cases where dense cicatricial tissue is softened, and in vesico-vaginal fistulæ where the borders are hardened and infiltrated, causing sutures to break through when an operation is attempted in this state.

The factors indicating massage in gynæcology are the same as those calling for massage in surgery, viz.: Injury and infection, exudation and immobility of parts. Sometimes it is indicated by sequelæ of preëxisting disease, as contraction of cellular tissue after parametritis, or retroflexio uteri resulting from relaxation and atony.

The following schematic table for indications of massage is not complete and is the same as used in massage in surgery. By massage treatment we wish to produce:

1. Acceleration of absorption and retrogression of inflammatory and traumatic exudation and deposits.

(Pelvic exudation and hæmorrhagic infiltration.)

2. Stretching, loosening, disintegrating, cicatricial, contracted or hypertrophied connective tissue, caused by inflammatory processes. (Thickened and contracted scars, contractions in the pelvic cellular tissues, adhesions and swellings caused by chronic inflammations, as also sequelæ, resulting from those conditions, viz.: Abnormal position of the pelvic organs.)

3. Stimulation of the circulation and restoration of the normal elasticity and *tonus* in: *a*, contracted, hardened and hypertrophied tissues; or *b*, relaxed tissues. (Chronic metritis, subinvolutions, prolapses impending on relaxed tissues and anomalies of position.)

The sphere of usefulness of this method of treatment in diseases of women may consequently be tabulated as follows:

1. Pelvic exudations and hæmorrhagic infiltrations.

2. Chronic parametritis and perimetritis.

3. Retroversio uteri.

4. Chronic metritis.

5. Prolapsus uteri et vaginae.

1. *Pelvic Exudations and Hæmorrhagic Infiltrations*.—This category of disorders is the most difficult amenable to massage treatment and by no means devoid of danger. Authors disagree as to the time when massage should be given in these diseases. While some recommend massage from the outset, even in the acute stage, others do not commence until the febrile disturbances have subsided. I believe the latter course more proper and never give massage until one or one and one-half months have passed after the beginning of hæmorrhagic infiltration. I discontinue massage and let a few weeks pass before attempting treatment

again, should febrile disturbances make their appearance during massage treatment, exercising every precaution and carefully watching the temperature. Kneading is the form of massage most advantageous in this class of disorders.

It is best to commence on the circumference of the exudation, gradually encroaching upon the primary center of the disease. Perfect rest in bed, careful observation of the temperature and watching of the pulse, are necessary in the beginning of treatment. Should the least suspicion arise that there are purulent processes present—rise of pulse or temperature—massage must be discontinued. The most promising results are obtained with exudations in the pelvic cellular tissue, while those in the pelvic peritoneum give much less satisfactory results. Massage should especially be avoided in perimetric exudations, which can be felt as tumors, as they often give rise to pelvic peritonitis. This latter disorder belongs to the domain of operative gynæcology. If the perimetric exudations are desiccated and have led to adhesions and contractions, or if we find chronic perimetritis, then we may safely rely upon massage as a valuable therapeutic agent. Massage acts most quickly in cases where the disease follows labor. The sooner these cases come under treatment the more quickly we can effect a cure, especially if the organs are still in a state of subinvolution.

2. *Parametritis and Perimetritis Chronica*.—Acute inflammation of the pelvic cellular tissue, though it may not present violent symptoms and the formation of exudations, is accompanied by lymphangitis or phlebitis, causing after subsidence a change of anatomic structure. This may sometimes be avoided by proper treatment, or even if the various

changes have taken place absorption will often follow without any treatment whatever, when the organs will be restored to their normal position or function. In the majority of patients this favorable condition does not take place. Inflammatory deposits remain exacerbating at times, contracting at others, causing an abnormal position of the various pelvic organs, which in turn cause a change in the pelvic circulation. In most of these cases we are led to give an empirical diagnosis as retroflexio or anteflexio uteri, mistaking the action for the cause. During the puerperal state, as is well known, the cellular tissue shows a marked tendency to absorb, and in this way brings about subinvolution. It should therefore be our aim to produce a condition of the parts similar to the puerperal state, when we want to cause absorption of old inflammatory deposits and contractions of the parametric cellular tissue. This condition we may reach with hot douches, glycerin and iodine. But unfortunately all these agents lose their therapeutic value before restoration of the parts is achieved. We must aid this treatment by mechanical manipulation. This should be continued until all deposits have been absorbed and the parts have become perfectly movable. The same treatment holds good if the disease is located in the cellular connective tissue surrounding the vagina. We often succeed in improving and even curing this class of disease after all other treatments have failed. More tedious are the cases of para and perimetritis caused by gonorrhœic infiltration.

The most favorable time for massage treatment in chronic parametritis is not long after an acute exacerbation. This is especially true in cases of chronic parametritis atrophicans. The prognosis in chronic para-

metritis after an acute exacerbation is a most favorable one; the longer the time allowed to elapse or the further away the focus of acute disease is located from the atrophied cellular tissue, the less likelihood is there of completely eradicating the disease.

Inflammation of the pelvic peritoneum is a disease of a serous membrane, contrary to parametritis, constituting a disease of connective tissue. It is due to this anatomic difference that we derive entirely different conclusions as far as this latter class of disorders is concerned as to the advisability of massage treatment. The therapeutic measures usually adopted were either to influence this condition in a general manner by rest, baths, depletion or application of iodine; or, if these measures were not successful, operations were resorted to to remove the primary cause of disease.

To introduce massage successfully in perimetritis it became necessary to show that we could accomplish more than with the usual methods of treatment, and render operative procedure unnecessary. Unfortunately we cannot treat these cases with the same impunity as those spoken of above. We must select our cases and watch them most carefully lest an acute pelveo-peritonitis may arise from latent inflammatory causes remaining in the exudations and becoming active. Even with this gloomy aspect we do not fare any worse than if we had followed the principles of operative gynæcology, which only too often give negative results and are certainly more questionable as to results than massage. Besides it is our duty at least to try a more conservative plan of treatment before subjecting a patient to an operation.

3. *Retroversio Uteri*.—If retroversion of the uterus is not due to

neoplasms causing displacement of the uterus, this disorder is almost always dependent upon inflammatory conditions in the pelvis, or upon relaxation of the uterine ligaments. Consequently retroversion of the uterus is not a disease but a cardinal symptom of some existing disease. This fact is often not recognized, and we are apt to make a diagnosis without duly considering the causes, but simply perceiving the effects. To the general practitioner it almost always suffices to have recognized a retro-deviation of the uterus, and accordingly he will introduce a pessary without trying to find the exact pathologic factors producing this anomalous condition; much less will he attempt a removal of the same.

Each retro-deviation should be classified under one of the following divisions:

1. Congenital or acquired arrest of development.
2. Inflammatory processes of para- or peri-metric origin.
3. Relaxation of the ligaments or vaginal support.
4. Combinations of Nos. 2 and 3.
5. Mechanical displacement by tumors in or surrounding the uterus.

It is not to be denied that despite the recognition of all these factors, we often are obliged to be satisfied with a symptomatic cure, but this should not prevent us from trying to find a means by which an anatomic *restitutio in integrum* may be established. The reposition of the uterus should never be attempted by force, as by sound or repositor, but by bimanual manipulations, especially when fixed by adhesion. In these cases massage should be resorted to, and when the uterus can be raised to its normal position it should be supported by a well-fitting pessary. As treatment progresses the pessary may be abandoned. In some cases we

may be forced to keep it in position, or resort to operative gynæcology, viz.: Ventro-resp. vagino-fixation. Opponents of massage may claim from this statement that massage does not benefit this class of disorders, but statistics show that over 50 per cent. can get along without pessary. In the other 50 per cent. we must permanently make use of some kind of support. It would be irrational to look upon this treatment as a cure for all diseases. We must individualize and not forget our other therapeutic agents; especially must we see that the pelvic floor gives the proper support. (Remedy perineal lacerations, vaginal prolapses, cystocele, rectocele and other factors tending to displacement of the uterus.)

4. *Metritis Chronica*. — Massage, as we have already said, seeks for its third object to induce a healthier state of circulation in and around the diseased pelvic organs, be this diseased condition due to induration, contraction or relaxation. Accordingly, two classes of conditions come under this head:

1. Induration and hypertrophy — the typical example of chronic metritis.

2. Prolapsus of the uterus (depending upon changes due to inflammatory processes). Chronic metritis is almost always found in connection with some other disease arising from inflammatory changes which spread to the connective tissue of the uterus, the inflammation spreading from the mucous membrane of the uterus or its adnexa. It is true that if we can master the primary affection the chronic metritis will often depart of itself; but too often the chronic metritis will keep up the pathologic process, and despite all treatment, and though the patient be apparently cured from the primary disease, will prevent total eradication of the mor-

bid conditions existing. It is in these cases that massage is a therapeutic agent of high value, and under its influence we soon witness permanent relief for the sufferer. We can feel the thickened and hardened uterus gradually return to its normal state. Measurements by sound will verify its decrease in size, the discharge will change in color and quantity, and soon cease altogether. In the rare cases of primary metritis we cannot expect any more of massage than of the older methods of treatment. While improvement and a symptomatic cure will take place, if massage be discontinued the condition of the patient will soon be the same as it was originally.

5. *Prolapsus of the Uterus and Vagina.*—Until a few decades ago the introduction of a pessary constituted about all that was done to remedy these disorders. The causes of prolapsus were but little understood. With a clearer understanding of the pathology of the female generative organs, operative gynæcology with its numerous methods of operations tries to restore the integrity of the pelvic floor. More attention is paid to the regimen during the puerperal state, so that perfect involution may take place before the woman leaves her bed, and that prolapse through relaxation of the various structures of support may be avoided. The causes of prolapsus may be classified under one or the other of the following three divisions:

1. Relaxation.
2. Pressure weight and traction.
3. Decreased support.

But the manifold therapeutic agents and operative procedures we possess are not complete without electricity and massage. Only the faradic current, however, is of any avail, in using electricity, as the galvanic current, despite its action on both varieties of

muscular fibers, has no influence in restoring the elasticity of thickened or rigid connective tissues. In these conditions we can obtain the best results with massage. No positive explanation or proof of its action can be offered, but the presumption is that the continued and constant stretching of the tissues, and the stimulation of the capillary circulation, thus promoting healthier nutrition of the parts, is directly responsible for the restoration of lost tonicity.

Contra-indications of Massage.—Manifestly massage is contra-indicated in all diseases of the genital tract requiring perfect rest of the whole body or of the genital tract alone. In pregnancy complicated with retroflexion of the uterus, even should that body be fixed by adhesions, it is best to adhere to the older methods of treatment, as an abortion would surely result were mechanical manipulations resorted to.

The use of massage in cases of chronic gonorrhœa should be very carefully guarded against. While at times massage beneficially affects the sequelæ of this pathologic process, it is liable to produce serious disturbances if existing latent causes of inflammation are forced into activity. Old encapsulated abscesses, either of ovarian or tubal origin, as well as pelveoperitonitis contra-indicate massage, though often they are only recognized after treatment has begun. Therefore where there is any suspicion of their existence we should insist upon an examination under anæsthesia, so as to eliminate the possibility of the presence of any such disorder.

And just at this point it is proper to observe that should uterine massage fail to realize the expectations of the practitioner employing it, its use is not therefore to be decried, nor its value depreciated. No rem-

edy or therapeutic agent exists in medicine that is infallible. And, moreover, is it not a very pertinent inquiry in this connection whether massage itself is at fault, or the practitioner employing it? If the manner of treatment be incorrect, *e. g.*, if the manipulations be too rough, massage will do more harm than good. Such results will also come from its use by persons who ignore the pathology and anatomy of the pelvic organs, and will most certainly follow where the case has been incorrectly diagnosed as one demanding massage. The apparent failure of massage in individual cases affords no argument against it, until the reason of such failure is known; and if shown to be due to any of the above causes or kindred causes, far from negating the efficacy of massage, where this treatment is properly called for, it will only add the weight of its testimony in favor of it.

CONCLUSION AND RESUME.

Massage is valuable in parametritis and hæmorrhagic infiltrations, in that it causes quicker and more complete removal of the exudations. It is valuable in causing absorption of contracted hypertrophied pelvic connective tissue, be it the remains or sequelæ of acute pelvic cellulitis, or be it due to an idiopathic circumscript chronic thickening. Massage is a therapeutic agency of high potency. It is very effective in combination with other therapeutic measures, such as baths, douches, medicated tampons, etc., and we often notice that where these remedies have been resorted to with failure, by the use of massage alone a permanent cure will be obtained. The best and quickest cures are observed in chronic diseases following the puerperal state: while a longer time is re-

quired in diseases following acute inflammatory processes, also when coincident with anomalies of position of the pelvic organs, especially in retro-deviations of the uterus.

In chronic perimetritis, the results, while not so good as those observed in parametritis, are encouraging enough to warrant the use of massage, since resort to operative procedures does not accomplish more for the patient. The same may be said of anomalies of position of the pelvic organs accompanying perimetritis.

In retro-deviations of the uterus due to adhesions or relaxation, massage is a remedy not to be underestimated; the indication for its use depends on the causes of the malposition. In these cases massage is free from danger and gives more satisfactory results than all procedures requiring force. Even if we do not succeed in some cases in restoring the uterus to its exact normal position, we can obtain a symptomatic cure without recourse to surgical procedures. The time required for reposition of the uterus is usually short: on an average of a month to a month and a half. In all cases that have their origin in the remains of inflammatory products or exudations, massage is invaluable.

The combination of massage with electricity is to be recommended in relaxations of supports of the uterus, provided the structures are intact; (perineal and vaginal lacerations, etc., have to be repaired). In senile atrophy the action of massage is very transitory. In retroversions and retroflexions, massage gives more favorable results than any of the older remedies. The time required to cure prolapsus and reposition of the uterus is sometimes quite long, depending on individual dispositions. At times, especially in bad cases, a pessary is required to support the

uterus. By exercising proper circumspection we can often achieve more by alternating massage treatment with other treatments than by long continued massage.

In conclusion, I have to say that massage does not set up for itself the claim that it constitutes an independent and sufficient form of treatment. It is only a mechanical therapeutic agent, intended to be used in combination with other tried and accepted remedies, in affecting a permanent cure, or in considerably lessening the time formerly required therefor. American gynecologists have been somewhat slow in accepting massage as a new remedial agent to be employed in diseases of women, and have been suspicious of the beneficial results that have been claimed for it. But the constant encouraging reports of European authorities, many of them erstwhile bitter opponents of massage, reports that are full of successes beyond the expectations of the most sanguine, are bound to work a change in this American sentiment. The scepticism of to-day will soon be converted into the faith of tomorrow.

In this paper I have omitted all mention of my individual cases; a history of them will furnish the matter of a subsequent paper. (*Journal of the American Medical Association*).

SUCCESSFUL CASE OF CÆSAREAN SECTION. By P. A. HARRIS. M. D.

Primipara, aged eighteen, born in the United States, a rather diminutive person with slight suggestion of rachitis, but apparently healthy and fairly well nourished, four feet six and one-half inches in height, with the following pelvic measurements: distance between iliac crests, 22 ctm.; anterior superior spinous process, 21

1-2 ctm.; external conjugate, 16 1-2 ctm. From promontory of sacrum to symphysis pubis, 7 ctm.; while the other internal diameters were all greatly shortened. She was believed to have passed slightly beyond the ordinary period of utero-gestation. The uterus was thought to contain a large child.

On April 9, 1893, very slight labor-pains began at two o'clock in the morning and continued for eighteen hours, or until ether was administered, at which time the os was dilated to a degree admitting only the index-finger.

The patient having been prepared in the manner usual in cœliotomy cases, was anæsthetized and removed to the operating-room at a quarter to nine in the evening. Incision was made in the median line of the abdominal wall to a point about three inches above the umbilicus. The uterus was lifted out of the incision, enveloped in aseptic towels, and held by an assistant, while the upper portion of incision in the abdominal wall was closed with silkworm-gut sutures. An elastic ligature was next placed around the lower segment of the uterus and secured. The incision was then made in the anterior median line of the uterus. Scissors were employed to enlarge this incision, and it was interesting to observe the pouching and semi-transparent membranes protruding from the opened uterus. When the incision was deemed sufficiently large, an assistant introduced a finger in the upper angle of the incision to limit in a degree the contraction of the uterus.

The membranes were ruptured, after which a living male child (weighing eight and one-half pounds) and the placenta and membrane were quickly removed. The cavity of the uterus was carefully irrigated with a one to forty solution of carbolic acid,

the irrigating fluid escaping through the slightly dilated os and the vagina. The incision in the walls of the uterus was closely sutured with strong silk. The number of sutures employed was probably fifteen or sixteen.

When the uterus was released from the elastic ligature very slight hæmorrhage appeared at one point of the uterine incision, which was readily controlled by the introduction of another suture. The uterus being now firmly contracted and the hæmorrhage controlled, the peritoneum was brought together with running catgut suture.

The abdominal wall was closed with silk-worm-gut, but it was so thin that a surprisingly large number of sutures were required to effect satisfactory coaptation.

Very little blood was lost during or following the operation. I should think very much less than we are accustomed to in an ordinary case of

labor. Twenty-nine minutes elapsed from the beginning of operation to the delivery of child and placenta, while sixty-six minutes more were required for the completion of the operation. The patient rallied rapidly from the operation.

The further treatment of the case was not unlike that usual in coeliotomy cases. The temperature was taken every four hours for one week, the highest point observed was $101\frac{4}{5}^{\circ}$ F., while the average temperature, reckoned from all observations, was $99\frac{2}{5}^{\circ}$ F.

On the sixth day after operation a rather free flow of milk occurred. The child was put to the breast, and afterward regularly nursed and mainly nourished at the maternal fount.

The mother made an excellent recovery, the child grew rapidly, and both were discharged from the hospital, in a condition of health, June 12th following. (*Medical Record*, 1894).

BOOK REVIEWS.

(All Exchanges and Books for Review should be sent to C. G. CUMSTON, 826 Beacon St., Boston.)

PRACTICAL URANALYSIS AND URINARY DIGANOSIS: A MANUAL FOR THE USE OF PHYSICIANS, SURGEONS, AND STUDENTS. By CHARLES W. PURDY, M. D., Queen's University; Fellow of the Royal College of Physicians and Surgeons, Kingston; Professor of Urology and Urinary Diagnosis at the Chicago Post-Graduate Medical School; author of "Bright's Disease and Allied Affections of the Kidneys"; also of "Diabetes: Its Causes, Symptoms, and Treatment." With numerous illustrations, including photo-engravings and colored plates. In one crown

octavo volume, 360 pages, in extra cloth, \$2.50 net. The F. A. Davis Co., publishers. 1914 and 1916 Cherry street, Philadelphia.

This valuable contribution to medical literature is deserving of highest praise. The volume is divided into two parts and an appendix. The first part treats of the analysis of urine, the second of urinary diagnosis: while the appendix represents an excellent chapter on the examination of urine for life-insurance.

Throughout the work nothing but practical and useful information is to be gathered, while the author de-

scribes many personal inventions and methods which will be found of greatest help to the physician.

To sum up it may be said that Dr. Purdy has written a work that should find its way into the library of every professional man, not only as a work of reference on its subject, but as a guide to the diagnosis of the diseases of the genito-urinary system.

DIFFICULT LABOR. By G. ERNEST HERMAN, M. B., London, F. R. C. P., etc. William Wood & Co., publishers, New York, 1894.

Among the many recent works on obstetrics that have come into our hands, there are none which are deserving of more praise than the volume before us. It comes from the pen of a man of experience and an authority as well, and the counsels given in its pages can only be of greatest value to the student and practitioner. The entire subject of difficult labor is given in clear and concise terms, and, what is particularly good, and not often found in books, are the necessary details which are fully dealt with. We can commend this little volume to all as a safe guide on its subject. The work is splendidly illustrated, which aids considerably in the comprehension of the text.

The publishers have done their share in making it attractive.

ON RICKETS, TUBERCULOSIS, ABDOMINAL TUMORS AND OTHER SUBJECTS. By SIR WILLIAM JENNER, Bart., G. C. B. Macmillan & Co., publishers, 66 Fifth ave., New York, 1895. Price \$4.00.

This volume contains a valuable collection of lectures and writings by the distinguished author, which have appeared from time to time in the past years in various periodicals and

books. As stated in the preface the statements made have been left exactly as they were originally given, without attempting to embody the results of more recent investigations.

To give the entire contents of this excellent volume would be too long, and the writings being above criticism, an enumeration of some of the most important subjects will suffice to show the great value of the book. Beginning with three lectures on rickets, in which the disease is described in a masterly way, the reader comes to two more on tuberculosis in the child. An article on deformities of the chest and two on emphysema are worthy of note, as well as one on congestion of the heart and its local consequences. The last half of the work is taken up by five lectures of great importance on the diagnosis of extra-pelvic tumors of the abdomen. The subjects treated are of interest to all medical men, and the easy style of the author renders the volume still more attractive. Messrs. Macmillan & Co. have printed and bound the work in their usual good taste.

NOTES ON THE NEWER REMEDIES, By DAVID CERNA, M. D. Second edition. W. B. Saunders, publisher, Philadelphia, 1895.

This little volume has been thoroughly revised and brought up to date. The author not only gives the results of his own studies but also the most recent physiological and therapeutic data furnished by the writings of other prominent investigators. Much new matter has been introduced so that the work might be up to the times with the more recent advances in modern therapeutics. An "Index of Diseases" has been added, thus rendering it still more useful to the general practitioner. We know of no more useful or im-

portant work on the subject, and believe that is one that will continue to find favor with all progressive physicians and students.

notes on which he may base his lectures; to the second, as a guide and index to the study of the diseases of women.

A SYLLABUS OF GYNÆCOLOGY. By J. W. LONG, M. D., Prof. of Gynæcology and Pædiatrics in the Medical College of Virginia, etc. W. B. Saunders, publisher, Philadelphia, 1895.

This volume is based entirely upon the *American Text-Book of Gynæcology*. It has been written with a threefold object: first to be used as lecture notes; secondly, to enable the student to more intelligently follow and retain his lectures; thirdly, as a convenient reference for practitioners.

For the first object, the work is perfect; for the second, good; but for the third we cannot see how a physician could make much use of it, as it is not sufficiently complete to give the necessary information regarding any given subject. For the teacher and student it may be highly recommended; to the first, as

We are informed that E. B. Treat, publisher, New York, has in press for early publication the 1895 International Medical Annual, being the thirteenth yearly issue of this eminently useful work. Since the first issue of this one volume reference work, each year has witnessed marked improvements, and the prospectus of the forthcoming volume gives promise that it will surpass any of its predecessors. It will be the conjoint authorship of thirty-eight distinguished contributors and specialists, from America, England and the Continent. It will contain the progress of medical science in all parts of the world, together with a large number of original articles and reviews by authors on subjects with which their scientific reputation is identified. Illustrations in black and colors will be freely used in elucidating the text. The price remains the same as heretofore, \$2.75.

ANNALS

—OF—

GYNÆCOLOGY AND PÆDIATRY.

DEPARTMENT OF PÆDIATRY.

The Artificial Feeding of Infants.

A CLINICAL LECTURE BY HAROLD WILLIAMS, M. D.,

Clinical Professor of Diseases of Children in Tufts' University, Given at the Children's Room, Boston Dispensary, Feb. 4, 1895.

REPORTED BY A. P. REED.

THIS little girl, two years and a half old, comes to us with a pathetic history. Her sister was the infant we have been feeding with sterilized modified milk, who died last month of pulmonary tuberculosis. Now this little girl comes to us with the same trouble. Her mother is dying of phthisis — the family is a very poor one; they are living in restricted quarters. The dying mother infected both her children. This little girl has not been to us before. She comes now because her aunt complains that she has a cough and is losing her appetite. Examination of the chest shows dullness and râles at the right apex. The râles are not so fine as you expect to hear, but are distinctly of the sub-crepitant variety and most plainly to be heard at the

back. You will notice that her breathing is more rapid than it should be. The sound which some of the students have noticed at the right of the sternum is that of cavernous breathing; it sounds something like a sonorous râle, but it is the sound described as cavernous breathing, —denotes the presence of a cavity. Treatment can accomplish nothing for her except to make her more comfortable. Dr. Williams then spoke as follows: —

“In our last lecture we saw that the proper food for a child was its mother's milk, and rules were given for the regulation of the same and for nursing. If for any of the reasons then given it becomes necessary to wean the child, it is the duty of the medical attendant to select

the food best suited to the needs of the infant in question.

"Personally I do not believe in a wet nurse if it is possible to get along without one. In this country the employment of wet nurses has never been popular, and for the evident reason that we have no peasant class from which to procure them. Our nurses in the East, as a rule, must come from the lowest and criminal classes, and even if we may obtain the services of a worthy married woman, she is sure not to be a source of unmixed delight to the household which tolerates her. She is apt to make all sorts of trouble and keep the family in perpetual turmoil, lest, if she does not have her way in everything, she will have an outbreak of temper and her milk will disagree with the baby.

"The requisites of a good wet nurse are three-fold: She must be (a) of good health; (b) of good moral character, and (c) able to furnish a good supply of healthy milk; and a paragon of this sort is hard to find in these degenerate days. Each factor is of supreme importance. When we add to those qualifications that she must be of moderate expense, we see the difficulties which lie in the way of selecting a wet nurse.

"(a) That she should be of good health is manifest. If she has tuberculosis or scrofulosis (as is shown by enlarged glands or by cicatrices of former glandular abscesses), if she has syphilis or gonorrhœa, or a history of insanity or rachitis, if she is menstruating or pregnant, or if she has any acute disorder, she is necessarily disqualified.

"(b) Morality of the nurse is of equal importance. If she has passed your examination on the question of good health to-day, it does not follow that she may continue to be so to-morrow. The women who become wet nurses are as a rule drawn from the immoral class. They cannot be kept close prisoners, and on their outings are liable to contract venereal diseases which they may convey to the nursling. They may indulge in alcohol, and habits of intoxication are extremely dangerous to the child; so also are the states of temper, jealousy and worry, so common in women of ill-regulated minds. A wet nurse once engaged must be under continual supervision. If she pass muster upon the first two qualifications, she must demonstrate by chemical analysis that her milk is of similar quality to that of the mother whose place she is to supply, or that it is at least equal to the average percentages of breast milk; and the quality being satisfactory, she must give evidence of the probable continuance of a sufficient quantity, as is shown by her own condition; by the condition of her breast; and the condition of her own child if alive. As is readily seen, this combination of qualities is very hard to find, and so with the rarest exceptions I believe it is better to begin on artificial feeding at once, if for any of the reasons given in our last lecture the mother is unable to nurse her child. Wet-nursing I regard as a last resort. When it is decided to feed the child artificially, our first endeavor must be to give it a food as nearly as possible like that which nature has sup-

plied for it. That is, milk of a certain proportion of constituents; sterile, so far as bacteria and their products are concerned; slightly alkaline in reaction; of a temperature of 98° Fahrenheit; and of a quantity suited to the age of the child.

"If the child has previously been nursed by its mother, and an analysis of its mother's milk has been made, we may compose its new food in such a manner as to make it chemically exactly similar. If such an analysis has not been made, we must prepare our food according to the average analyses of human milk.

"Table I. shows a comparative analysis of human and cow's milk.

ANALYSIS TAKEN FROM ARTHUR V. MEIGS, M. D., "MILK ANALYSIS AND INFANT FEEDING."

	HUMAN MILK.	COW'S MILK.
Water	87.	87.
Fat	4.	3.7
Casein	1.	2.9
Sugar	7.	4.9
Ash	.1 . . . . .	.4
Reaction	Slightly Alkaline.	Slightly Acid.

"By comparing the two we see that cow's milk contains more albuminoids, less sugar, and more ash, than human milk, and is slightly acid in reaction. To feed an infant artificially, it is obvious that the nearer we can approximate its food to the average standard of human milk the more successful we shall be in our artificial feeding, and this is accomplished by diluting cow's milk with water until the albuminoids are nearly equal, and then bringing it up to the mixture, up to the standard,

by the addition of cream, milk-sugar and lime water.

"This modified cow's milk was first suggested by Dr. J. F. Meigs, of Philadelphia, and was placed on a basis of chemical exactitude by Dr. Arthur V. Meigs, his son, and has been long and favorably known as the 'Meigs Cream Mixture'.

"Subject to slight changes which will be spoken of later, this is practically the modified milk of the present day. We thus see that chemically a food may be prepared which exactly resembles woman's milk. This brings us to our second qualifications, viz., that the food shall be sterile. The milk from a healthy woman's breast is found to be free from all bacteria or their products. Cow's milk from the milkman's wagon, on the contrary, is swarming with them, containing, according to observations, from eight or ten thousand colonies to two million per cubic centimeter, due to a lack of cleanliness in collecting and preserving it. To Prof. Soxhlet, of Munich, seems to belong the credit of first describing a practical process of sterilizing milk for infant feeding. Drs. J. A. Jeffries and H. C. Ernst, of Boston, had both fed children on sterilized food as early as 1884, but so far as I know had not published their results. Dr. T. M. Rotch published his first article on the subject in 1887, and thus it may be said that Dr. Soxhlet antedated all others in his published results of sterilization of infant food. By this sterilization of the food by heat we can prevent the further growth of the bacteria present in the milk, although we

cannot change the products of the bacteria already existing, for which reason, let me say in passing, it is of the utmost importance to have a clean fresh milk to start with in the preparation of infant's food.

"We therefore see that we can prepare a food chemically, exactly similar to mother's milk, and that by means of our bacteriological knowledge we can render it practically sterile.

"Experience has also taught us the quantities and the intervals at which such food should be supplied to the infant, a table for which regulation I herewith append:—

TABLE II.
GENERAL RULES OF FEEDING.

AGE.	Interval. Hours.	Feedings in 24 hours.	Amount at each feeding. Ounces.	Amount in 24 hours. Ounces.
1st week,	2	10	1	10
1st to 6th wk	2½	8	1½ to 2	12 to 16
6th week to 6th month	3	6	3 to 4	18 to 24
At 6 mos.,	3	6	6	36
At 10 mos.,	3	5	8	40

—[Dr. F. M. Rotch, Keatings' Cyc. Dis. Children.

"Common sense teaches us that the food should be given at the temperature of the human body. Having thus decided how often a baby is to be fed, how the cow's milk upon which it is fed is to be modified, and how that the food is to be rendered sterile, it remains for us to learn the best methods of procedure for obtaining these desired results.

"Now at first sight it may appear that it was a very simple matter to modify milk with the addition of cream, etc., and to sterilize it when so modified, in a manner calculated to make it exactly similar to human milk. But the reverse was found to be the case.

"Cream was found to vary in quality and in the quantity of fat contained. Milk also varied, and it was found that the method of sterilizing at first in vogue altered the character of the milk. The apparatus moreover was cumbersome and complicated. The whole matter required to be simplified and systematized, and for such method and system the medical profession and the community at large are indebted to Dr. J. M. Rotch, Professor of Children's Diseases in the Harvard Medical School. In this era of medical progress I know of no greater life-saving advance than this same systematizing of infant feeding, and the credit for its arrangement and introduction unquestionably belongs to Dr. Rotch. Through the kindness of Mr. Gordon, of the Walker-Gordon laboratory, I am enabled to show you here today the most perfect appliances for the preparation of sterilized, modified milk, and for the artificial feeding of infants.

"Taking the average analysis as a basis, with the percentages of seven sugar, four fat and one albuminoids, Dr. Rotch finds we must take:—

Rx Cream	1½ ounces.
Milk	1 "
Water	5 "
Lime water	¼ "
Milk sugar	3½ drachms

"If the baby is six weeks old it is to have 12 feedings, each of two ounces, making 24 ounces in all. We therefore mix together in a graduate three times the above quantity of food, and pour two ounces into each of twelve tubes, which have previously been sterilized by being placed in a hot oven, care being taken that the food does not touch the sides of the tube. The tube is then stoppered with cotton and placed in the sterilizer which is filled with water to the height of the milk in the tube. When all the tubes are so filled the water in the sterilizer is heated until the thermometer registers 170° Fahrenheit. The sterilizer is then taken from the fire, and a cosy is put over it for half an hour. This maintains the temperature in the sterilizer for thirty minutes, long enough to sterilize the milk for all practical purposes. This method is not intended for the sterilization of milk for keeping a long time, as the spores of the bacteria are not destroyed, but experience has taught us that it is sufficient for practical purposes. This is the process known as the Pasteurization of milk.

"Sterilization calls for higher degrees of heat, 212° or more, and for repetition of the process once or more times. Last year a patient of mine took a supply of modified milk prepared at the Walker-Gordon Laboratory with her to California, with which to feed her child on the train, and on another occasion I had a patient whose food was sent to him to Florida, being thus prepared at the Walker-Gordon Laboratory. In both instances the milk was perfectly pre-

served and unchanged. After warming thirty minutes under the cosy the milk is placed in a cool place, and a tube is taken for each feeding, the tube warmed and the nipple being adjusted.

"There is no object in trying to sterilize the nipple, as the child's mouth is swarming with bacteria. This, in brief, is the domestic process suited for those who are unable to avail themselves of the laboratory. The greatest difficulty in the domestic preparation of the food lies in the instability, the age and dirtiness of the milk, bacteriologically speaking, as is ordinarily procured from city milkmen, objections which will suggest many possibilities to the vivid imagination, when I explain to you the perfected methods of the laboratory. The Walker-Gordon Laboratory aims at a far greater accuracy than can be attained in a private house. It starts with the milk as stable as milk can be rendered by a weighed and unvarying feeding of the cows. Cleanliness in the barns, healthy stock, and selection of the breeds are carefully attended to.

"The udders of the cows are washed, disinfected, and washed again before each milking. So too are the hands of the milkers. The milk is received in sterilized jars, and in many instances has been found to be free from bacteria on its arrival at the laboratory in Boston. The cream is then separated from the milk by the centrifugal process, and a cream is thus produced of known value, 16 per cent. being that used for the preparation of the food. The cream is thus taken from milk *hours* ..."

instead of *days* old, a very important factor, the bacteriological possibilities of a pan of milk setting for cream in a dairy none too clean being very great indeed.

"The milk is prepared according to the physician's prescription, written according to the control analysis of the individual case, or according to the average analysis of a large number of cases. If a higher percentage of cream albuminoids or milk sugar, or the reverse are demanded, they can be readily and accurately supplied.

"The milk when modified according to the physician's prescription, is sterilized or not as the prescription states, and the tubes containing it are placed in a basket or ice box like these I have shown you, and are delivered daily at the house of the patient.

"The empty basket or box is sterilized before its reception into the laboratory, thus obviating the possibility of any contagion. The advantages of being able to change the percentages of the constituents of the milk are very great. By adaptation, it is my belief that food can be supplied which will agree with every baby. The most frequent complaint is constipation, but this can usually be remedied by increasing the percentages of fat or albumen, or by carefully increasing the total quantities of food, the average estimates being often too small for individual cases, and a slight excess in the daily quantity of food often causing a looser dejection. All the articles which I have shown you here can be procured at the Walker-Gordon

Laboratory, 203 Clarendon Street, or at their branch offices in New York, Brooklyn and Philadelphia. They are the best of their kind. The sterilizer is of the most convenient pattern, the bottles are made to insure convenience and cleanliness, the little wire rack is to hold them when taken from the frame, and the lamp and heater are for warming the milk.

"I have used this food for several years and it has given unqualified satisfaction. In one or more cases of children under my charge during the first year of infant life, the patients have never exceeded or omitted one daily dejection except in one or two instances.

"Mr. Gordon writes me that: In two thousand one hundred and fifty-five cases of well-to-do children, and in one thousand one hundred and seventy-six cases of tenement house infants, prescribed for by four hundred and sixty-eight different physicians in New York and Boston, with very slight exceptions no other ingredients have been used in the modification than those which were native to milk. In seven hundred and seventy-four cases, where the average gain per day was $\frac{23}{100}$ of an ounce under the care of one hundred and seventy-eight different physicians, no cereals or foreign additions were used, but what might be called straight modified milk was employed.

"As to the amount at a feeding that has apparently proved successful in this large number of cases, our medical records show that for the first three weeks a fraction under one ounce has been sufficient.

4 to 8 weeks	2½ ounces.
8 " 12 "	3¼ "
12 " 16 "	3½ "
16 " 20 "	4¼ "
20 " 24 "	5¼ "
24 " 28 "	5½ "
28 " 32 "	6¼ "
32 " 36 "	6½ "
36 " 40 "	7½ "
40 " 52 "	8 "

"As the child grows older and is able to digest starch, usually at or about the eruption of the fourth incisor tooth, I am in the habit of substituting one feeding a day of plain cow's milk, diluted one-half with oatmeal jelly and sweetened. This oatmeal jelly is prepared by boiling a quarter of a pound of oatmeal in a quart of water, down to one pint. The mixture is then diluted with a

pint of boiled water and strained through a cloth. One feeding is given daily, and if it is found to agree with the child, a second is added, then a third, until we have the child fed upon half milk and half oatmeal jelly, a sufficient food for the third six months of its life. If there is a tendency to looseness of the bowels, barley water (made in precisely the same manner as the oatmeal jelly) may be used in its stead.

"After the molars have made their appearance, bread and butter, part of a soft boiled egg, or simple boiled rice may be added, a diet which need not be exceeded until the second year is complete."

Two Interesting Cases of Diphtheria.

JAMES B. THORNTON, M. D.,
BOSTON, MASS.

MY object in presenting these cases is fourfold: 1st, to show the dramatically brilliant merits of the use of anti-toxine; 2d, to show how easily one can be misled as to the nature of apparently trivial affections of the throat; 3d, to show the importance of the present system of medical inspection of schools; 4th, the value of the culture tubes as a means of diagnosis.

CASE I. — L. L., age seven years. Patient complaining to mother of sore throat, Feb. 16th; there was loss of appetite and some restlessness. I saw patient for the first time on

Feb. 18th, at my office; temperature 101; a few small patches confined to tonsillar surface closely resembling follicular inflammatory deposits. I ordered a laxative and a local application of carbolic acid, seven grains to one ounce glycerine, to be used every two hours. Feb. 19th, no change in condition. Feb. 20th, condition about same, with the exception of the first symptom, which led me to feel suspicious as to the true nature of the disease — the odor of the breath; all other symptoms conspicuous by their absence.

I changed the local treatment to

solution of the peroxide of hydrogen, and on the following morning took a culture of the secretions, child at this time being practically well, except the one objective symptom of the presence of morbid material in the throat.

On Feb. 21st I received Dr. Ernst's official statement that the characteristic bacillus of diphtheria had been found in the culture, and I immediately reported the case to the Board of Health. No further attention or treatment was adopted or needed in this case.

CASE II. — W. L., age five years, brother of L. L. Mother noticed that child was feverish at about 2 A. M., Feb. 22d, but no marked symptoms of any kind appeared until latter part of afternoon of same day, when the temperature ran up; vomiting and delirium came on.

Saw patient at 5:30 P. M., temperature was then 105°, pulse 176; semi-comatose, with eyes rolled to top of head, but on being aroused would speak incoherently.

Examination of throat presented typical membrane and marked glandular swelling. I at once telephoned for a phial of anti-toxine, and while waiting for same gave a laxative and wrapped in sheeting rung out in cold water; also ordered three-grain anti-febrin powders every 90 minutes, alternating with 15-drop doses of brandy.

At 6.30 I injected into cellular tissue of right gluteal region 15 c. cm. of anti-toxine. At 10 P. M., temperature had dropped to 103°, pulse 160. I left my clinical thermometer with the mother and told her not to allow

temperature to rise above this figure by the systematic use of the cold pack. At 4 A. M., Feb. 23d, by her report, temperature was 101° and bowels had moved satisfactorily.

Saw patient at 6.30 A. M.; was sleeping naturally, skin moist and cool, clear-headed on being awakened, and asked for something to eat; temperature normal, pulse 120. Gave 10 c. cm. anti-toxine in left gluteal region and ordered wine-glass egg-nog every two hours. At 3 P. M., temperature 100½°, pulse 130; 9 P. M., temperature 101, pulse 134, is hungry and wants to get up and play with sister.

Feb. 24, 9 A. M., patient passed a good night. Temperature 101°, pulse 130. Inspection of throat showed that membrane had changed to perfectly white color and was separated all around circumference, threatening to fall off at any moment.

Feb. 25th, 9 A. M., condition normal in every way; throat entirely free from membrane. Feb. 27th, culture of throat secretions shows absence of bacillus.

March 1st, I was hastily summoned by mother saying "child was breaking out." On examination found a marked urticaria on right thigh and buttock, which rapidly spread to left thigh and thence all over body and face, causing swelling of eyelids. There was slight itching and rise of temperature. March 2d, eruption wholly disappeared. Duration of sickness, seven days; but patient practically well 96 hours from first appearance of disease.

473 Tremont Street, March 4, 1895.

Practical Notes on the Administration of Somatose.

EDWARD REICHMANN, ELBERFELD, GERMANY.

SOME time ago a preparation was introduced into the market which consists almost entirely of the readily soluble and assimilable albumoses, and which represents an excellent substitute for genuine egg albumen. Somatose is a yellowish granular powder, readily soluble in water, especially in warm water. Its watery solution has a slight but peculiar odor, recalling somewhat that of glue.

Experiments in nutrition with this preparation which have been made by various investigators have abundantly demonstrated the utility of this remedy. In my own practice, as well as that of a number of my colleagues in this city, somatose has also proved very serviceable.

I have employed this preparation almost exclusively in adults in cases of phthisis, pleuritis with marked debility, chlorosis with dyspeptic disturbances of various kinds, in part attended with marked vomiting. Some of the patients greatly relished it, while in others the taste had to be covered by various corrigents. In one case I was compelled to discontinue its use. This was a patient suffering from phthisis with pronounced dyspeptic disturbances, who was unable to take without inconvenience almost every variety of solid or liquid food and refused to continue the use of somatose, whether given in milk or cocoa. Another solvent, viz., coffee, which had been employed with advantage in other cases, could not be used here.

In general the results were very good. Somatose was well borne, no disturbances of the stomach or intestinal canal were experienced, and the nausea which not infrequently attends the use of peptones was not observed. In some instances considerable increase of weight was noted within a short time, an observation also made by some of my colleagues.

Among others, the case of a child eight weeks old was reported to me, in which artificial alimentation was resorted to, but was followed by serious disturbances (frequent vomiting of caseous matter), so that the attending physician urgently advised the employment of a wet nurse. With his consent, however, a trial was first made of somatose mother's milk (that is, milk in which the egg albumoses, recommended as an addition by Rieth, had been replaced by the albumoses derived from meat, as found in somatose), and this preparation proved very serviceable. At the time of birth the child weighed 2900 grammes, in the fifth week 3200 grammes, no increase of weight occurring until the ninth week. After commencing the administration of somatose, the stools, which at first were green, became normal, the vomiting subsided, and, as I would especially remark, the vomited material was more flocculent. At the close of the period of somatose administration, the weight was 3485 grammes, i. e., the child had gained 300 grammes within ten weeks. I would report another observation

from the practice of Dr. Ruhle: In a case of severe puerperal fever of ten weeks' duration, somatose was administered in oatmeal, soup and other solvents, for a number of weeks, and according to the opinion of Dr. Ruhle the patient's recovery was in part attributable to this preparation.

As regards the dosage of somatose, experience thus far has shown that the repeated administration of small doses is most advisable, as these are completely utilized and are at once available for producing a gain in flesh. A level teaspoonful (corresponding to about 3.0 grammes) given three to four times daily, in addition to the customary diet, is amply sufficient.

As already mentioned, somatose was administered in milk, gruels, cocoa, coffee with or without milk. When given in bouillon, patients expressed themselves very differently with regard to its taste; while preferred by some, this solvent was rejected by others. Another method of administering somatose, which was regarded by one of my patients as very agreeable, consisted in dusting it on buttered bread.

In cases in which patients reject this preparation because the taste is

not completely covered, a new method of administration may prove useful, namely, its mixture with biscuits or chocolate. Preparations of this kind containing 10 per cent. somatose can now be obtained, and when given in this way the taste of somatose is completely concealed. These products will prove of value in many cases. The biscuits can be taken with tea or other beverages.

On the ground of the observations made by me, and the favorable results derived from the use of somatose, I think this remedy is deserving of further trial.

POSTSCRIPT.—A successful result to which somatose materially contributed was recently obtained in case of a young workman suffering from incipient phthisis. He was first treated by me at the Bethesda Hospital in this city for hemoptysis, which was not severe. After leaving the hospital his weight diminished one kilo during the first eight days, but under use of somatose increased two kilos in the next eight days, and two and one-half kilos in the following two weeks,—a total increase of four and one-half kilos in the course of three weeks.

New York Academy of Medicine. Section on Pædiatrics. Stated Meeting, February 14, 1895.

TRANSPOSITION OF VISCERA.

Dr. HENRY DWIGHT CHAPIN presented a young man in whom the heart and spleen were on the right

side. The young man had come to him complaining of slight pain in the right side, and under the supposition that he had a localized pleurisy, a physical examination was

made, and this transposition of the viscera discovered.

Dr. ABRAHAM JACOBI carefully examined the man, and confirmed the diagnosis.

THE EFFECT OF THE PRIMARY SCHOOLS ON THE HEALTH OF THE CHILDREN.

Dr. HENRY D. CHAPIN, in a paper with the above title, spoke of the bad sanitary condition of some of the primary schools, and referred to the reports that he had made in 1890 and 1891 for further details. In most of these schools the children were crowded together in the lower rooms of the grammar school buildings without sufficient light and air. The prescribed allowance of air in the three lower grades was 70 cubic feet, and in the three higher grades 80 cubic feet, while in the grammar schools it ranged from 90 to 100 cubic feet. The Board of Health, however, required that each person in a tenement house should have from 400 to 600 cubic feet. Again, many of the class rooms in the primary schools were without proper furniture, and as a result the little ones were compelled to sit in awkward and unhealthy attitudes. Another matter of very great importance was the absence of proper provision for hanging and disinfecting the outer garments of the school children. The great curse of our present system was the division of responsibility among three bodies, viz.: the Board of Trustees, the Board of Education, and the Board of Estimate and Apportionment. With a proper fixing of the responsibility many of the evils spoken of would speedily disappear. The Board of Education was deserving of censure for the attention given to the higher schools at the expense of the primary schools, particularly in the poorer districts. He hoped that a mandatory law would be

enacted which would give the Board of Health authority to compel observance on the part of the schools of proper sanitary regulations.

HOW CAN THE SANITARY CONDITIONS OF THE PUBLIC SCHOOLS BE IMPROVED.

CHARLES C. WEHRUM, Esq., ex-Commissioner of Schools, discussed this question. He said that his remarks were based on an experience of three years among schools, during which time he had visited all the public schools in this city and state. Deficient light and ventilation seemed to him to constitute the greatest menace to the health of the children attending these schools. In some of the schools it was necessary to employ artificial light, and where this was gas, the air became rapidly vitiated by the combustion of the gas, thus adding another evil. In some of these schools electric lighting had been tried, but while it had been found that there had been a marked improvement in the general health of the scholars, the system had proved too expensive.

The speaker then referred to certain schools which had fallen especially under his observation by reason of their very bad sanitary condition. In one grammar school, for example, he found 2,066 children in attendance, and the rooms lighted by gas, and dreadfully over-heated. Although this school had been in use for forty years, he found eighteen class-rooms without desks. In another school he counted 85 children crowded on to 64 seats. At the time of his tour of inspection there were 240 class-rooms without desks; to-day, there were only fifteen class-rooms still unprovided with desks. The three great factors that had led to this deplorable state of affairs were inaction, circumlocution and parsimony. At the present time,

without taking into consideration the rapidly increasing needs of the schools, he felt confident that seven million dollars would be required to put the schools in this city in proper condition.

THE INFLUENCE OF THE SCHOOLS IN DISSEMINATING INFECTION.

Dr. MOREAU MORRIS took up this subject. He said that parents and guardians with few exceptions were willing to carry out the suggestions of the family physicians regarding the best way of preventing the spread of the infectious diseases. In the schools personal contact was unavoidable, and the susceptibility of children in general made it difficult to prevent the spread of such diseases. There were many ways of carrying contagion which would escape the notice of the casual observer. Thus, the school-books were usually covered with muslin or cloth, often from houses in which there had been infectious diseases. The indiscriminate use of slates and of lead pencils was another means of spreading disease, and the common practice of washing the slates with saliva was exceedingly liable to cause the dissemination of diphtheria. In the higher grades of the schools it was now the custom to furnish the scholars with paper pads and lead pencils, but unless each scholar had his own pencil the same danger still existed. Books should never be covered with any textile fabric, but instead with stiff glazed paper. The outer garments of the children should be placed in suitable closets outside of the class rooms, and should be disinfected while there. The children should be compelled to come to school with clean faces and clothes. A mild attack of scarlet fever or measles was popularly supposed to be non-contagious, and for this reason

many children so affected were allowed to return to school while capable of spreading the disease. The teachers deserved much credit for their watchfulness and promptness in detecting children just developing infectious diseases. Any child found to be suffering from a sore throat should be sent home immediately, and not allowed to return to the school until entirely well. All the children attending public schools were required to present vaccination certificates, or to be vaccinated if this had not been done for seven years, but such vaccinations could not be performed by the Board of Health physicians without the consent of the parents or guardians of the children.

Dr. LEE, Assistant Superintendent of Schools, said that he thought it would require three times seven million dollars to put the schools of the city in an ideal condition. It ordinarily required three years to acquire property and prepare plans for schools. Out of the 145 school buildings under the care of the department, probably not more than one-tenth were in anything like the bad condition described by Mr. Wehrum. He had found that the average time that elapsed from the sending by a physician to the Board of Health of a notice of a case of contagious disease, and the receipt by the principal of the school of such notice, was one week, and hence he thought it would be better for the physicians to notify the school principals directly. At the present time it would be found that there was a change of occupation in all the primary schools every half hour, with calisthenic exercises freely interspersed. In our efforts to improve the sanitary condition of the public schools we should not forget that there were many private schools equally deserving of the attention of the medical profession.

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ORIGINAL COMMUNICATIONS.

Tumors of the Vagina, Considered in the Obstetrical Point of View.

A CLINICAL LECTURE DELIVERED AT THE SUFFOLK DISPENSARY ON MARCH 16, 1895, BY CHARLES GREENE CUMSTON, B. M. S., M. D.,

*Instructor in Clinical Gynæcology, Faculty of Medicine, Tufts' College ;
Member of La Société Française d'Electrotherapie de Paris.*

GENTLEMEN:—Some of you will remember the young married woman who consulted us for a pregnancy, which was about five months along, and who presented a cyst in the posterior wall of the vagina. This cyst was the size of a small walnut, and when I punctured it, after all due antiseptic precautions had been observed, a rather thick, transparent liquid escaped. A simple dry dressing of euophen and carbolized gauze was all that was required to complete the operation; and, let me say in passing, that I consider euophen one of the best, if not the best, powders for dressing the vagina after minor or plastic operations that I have ever experimented with, and well worthy of your attention and trial.

I shall take this case, gentlemen, as the text for this lecture, as tumors of the vagina are of considerable importance, especially when the patient is pregnant, on account of difficult or impossible delivery, and I desire to put before you the various growths which may be met with in the birth canal. They may be divided into five groups, as follows: (1) cysts; (2) fibrous tumors and polypus; (3) carcinoma; (4) sarcoma; (4) hæmatoma.

Of all the neoplasms in the vagina complicating pregnancy, cysts are the most common. Their situation, as well as their size, are most varied, while the difficulty of extracting the child during labor is not always in proportion to their volume.

Winckel and von Preuschen have

long since studied the formation and ætiology of cysts of the vagina. Winckel found in fifty cases of cysts, nineteen times the growth was on the anterior wall, fourteen on the posterior, and five times on the lateral walls of the vagina. The same writer relates five cases in which the cysts were present in pregnant women.

In one case it was situated in the last third of the anterior vaginal wall and was about the size of a walnut. The neoplasm was incised, the woman having a normal labor thirty-five weeks later.

In two cases the cysts were the size of chestnuts and were situated on the posterior wall at the entrance of the vagina. They were also incised and labor took place without any complications. Winckel's third case was a IV para, who noticed a discharge of pus from the vagina at the end of pregnancy. The vagina was covered, on both anterior and posterior walls, with small cysts, some of which were shaped like and attained the size of a cherry. Labor took place spontaneously, and, six weeks after, all the cysts had disappeared. In the remaining two cases the two small cysts had likewise no effect on the labor.

Pregnancy complicated by *colpo-hyperplasia cystica* I will pass over, as in this affection the growths are so small as not to interfere with labor. In the Berlin clinic three cases of cysts complicating the progress of labor were observed, and I would like to give them to you in a few words.

CASE I.—Woman, aged twenty-five, I para; menstruated for the

first time at the age of twenty; menses were irregular. On examination, a small pediculated growth, the size of an egg, was found on the posterior vaginal wall. The tumor felt quite elastic, prolapsed when the patient stood up, but returned into the vagina when she sat down. The patient said that she first noticed the tumor at the end of pregnancy, and that it was not painful. At labor, which was spontaneous, the cyst was flattened by the head of the child, but was afterwards perceptible to the touch. The post-partum was uneventful, and thirteen days later, when the patient left the hospital, the cyst was like a flabby, withered sac, but did not prolapse.

CASE II.—Woman, aged thirty-four, III para; menstruation, which was irregular, began at the age of twenty-one. Both preceding labors were normal. On the left side, at the entrance of the vagina, a cyst the size of a hazel-nut was found. The cyst was punctured, giving issue to a serous fluid, and part of the wall removed. Labor occurred several days later, and was uneventful.

CASE III.—Woman, aged twenty-seven, I para. Menses appeared at eighteen; regularly every three weeks. On the right side of the vagina a cyst the size of a fifty-cent piece was found, which, when punctured, gave issue to gas. Labor uneventful.

Other cases are reported in which labor took place spontaneously, or where puncture was performed before labor began. In the French edition of Churchill's work, a case of follicular mucous cyst is reported, which

was situated in the vesico-vaginal septum, directly behind the urethra, and was mistaken for a cystocele. Labor took place without complication, and several days later the cyst was removed by cauterization.

Puech reports a case in which the passage of the foetal head was prevented by a vaginal cyst. This was punctured, resulting in a normal delivery. In a case reported by Morlanne, the cyst had an elongated shape and protruded at the vulva with each pain. It burst spontaneously, and the rest of the labor was normal.

McClintock described, under the name of *cystopolypus*, an elongated tumor embedded in the posterior vaginal wall, but which did not prevent a normal labor. The contents was a gelatinous fluid.

Lever was obliged to puncture a cyst, the volume of a child's head, as the pains were not strong enough to overcome the resistance offered by the tumor. It was situated between the vagina and rectum, its contents being an oily fluid containing a great quantity of cholestearin crystals.

Hardwick has put on record a case of a non-pediculated cyst in the recto-vaginal septum which was greatly stretched by the passage of the head. A pint of clear liquid was removed by puncture, the labor ending without any other complication. I may add that Winckel considers this tumor rather as a hydrocolpocele than a vaginal cyst.

Osterloh has also described a case in which he incised a cyst during labor which ended without any further trouble.

During the post-partum these cysts may suppurate, or, if wounded during the passage of the child, may slough, and thus produce a focus of septic infection leading to dangerous accidents. As an illustration of this, I would mention Huguier's case, in which he punctured a cyst of the vagina. It filled again in two years, and the patient at that time was pregnant. During labor the cyst disappeared, and the patient died eight days later from metro-peritonitis. The autopsy showed a cavity the size of a nut in the vaginal wall, communicating with the vagina by an opening two centimetres in length. Suppuration of the cyst was produced by the traumatism of labor.

I have now given you examples where the neoplasm was no hindrance to birth, but there are cases on record in which, on account of the considerable size of the cyst, the progress of labor was interfered with to such a degree as to lead to serious complications, and without surgical interference the expulsion of the foetus would have been impossible. Peter's case is an excellent example.

A woman, aged 34, IV para, who had always menstruated irregularly and had been confined naturally three times, presented a cyst the size of an orange, occupying almost the entire posterior vaginal wall. The growth was soft to the feel, rather movable backwards. The pains, which were good in quality, were not sufficient to overcome the obstacle and even traction with the forceps could not accomplish delivery. On account of the pressure of the head, the tumor was pushed against the rectum, and

by this the anus was considerably dilated. Profiting by this condition, Peters punctured the cyst per rectum, after which he applied the low forceps and easily delivered a living child. The post-partum was normal. The contents of the cyst consisted of about a pound of yellowish liquid.

Cysts due to the echinococcus are met with in the vagina, although I am not aware that any case has been reported in America. They are usually situated in the para-vaginal tissues, or in Douglas' cul-de-sac. This variety of cyst is not without importance in the obstetrical point of view, as the few cases recorded in medical literature demonstrate.

Gebhardt describes a case in which the anterior pelvic wall was distended by a cyst the size of a fist. The pains with good contractions caused the tumor to burst, and suddenly blood and echinococcus vesicles were expelled per vaginam. High forceps were quickly applied in order to avoid collapsus.

In a case reported by Pauls, the patient was pregnant for the third time; the other two labors had been normal. A trial with the forceps for half an hour was fruitless. When the foetal head was pulled on, a pear-shaped tumor the size of a large walnut appeared, situated on the posterior vaginal wall, and which, if traction with the forceps was stopped, would flatten out and was scarcely visible. Per rectum, the tumor could be distinctly felt, situated in the tissue between the rectum and vagina. By lightly scratching with the fingernail, it was separated from the mucous membrane of the vagina and

underlying tissues and a pedunculated dark-colored tumor the size of a man's foot was brought out. The contents was liquid. A ligature was placed around the base of the tumor and the growth was cut off; the child was easily delivered.

Another case, due to Roux, was that of an echinococcus cyst in the vaginal wall, rendering labor difficult. The cyst had, however, no bad effect on the outcome of the case.

Blot, von Wiener, Park, Porak and Birnbaum have reported cases of echinococcus cysts in the perivaginal tissues, in which various means, such as the forceps, perforation, puncture of the tumor, etc., were necessary in order to bring the child into the world. Although these operations were done before the days of rigorous antisepsis, all the patients recovered, with the exception of von Wiener's case, who died from a rupture of the uterus.

In closing the subject of cysts, I will add two more cases in order to be a little more complete. Under the name of "urethral cyst," Hickinbotham described a large, soft growth, which was situated in the anterior vaginal vault, in front of a hypertrophied cervix, and projected from the vulva. Labor had already commenced and the patient was so exhausted that cephalotripsy was done, delivery being quickly executed. Twelve days after the cyst burst spontaneously, as it had been increasing in size and was painful. It contained a kind of pus. The patient recovered.

Küchenmeister has likewise recorded a similar case under the name

of "urethral cyst." He found a fluctuating point, parallel to the course of the urethra, and quite high up on the anterior vaginal wall. The forceps were removed and the tumor incised, giving issue to about an ounce of pus. The ultimate result is not given.

The prognosis of labor complicated by a vaginal cyst is, on the whole, not bad, especially at the present day, when asepsis can be practiced by every physician. As to the treatment: If you are called to a case already in labor, puncture the cyst, using all precautions, such as a free irrigation of the vagina with a solution of lysol, creolin or permanganate of potassium. On the other hand, if you are consulted for a pregnancy, make *one* æseptic examination of the vagina, in order to ascertain the condition of the pelvic organs, vagina etc., and, if a cyst be found, it should be opened, the contents emptied and the vagina again irrigated and dusted with some antiseptic powder and very lightly packed with gauze.

It was with the view of preventing any future complications during labor, in case the cyst increased in size, a fact that should be remembered, that I performed this simple operation, harmless if aseptically done, very dangerous if not, on the patient who presented herself at my clinic.

As regards fibroid tumors, it may be said that they come next in frequency. Güder gives eighteen cases in his thesis in which they were complicated by pregnancy. In this number he includes polypi.

The fibrous and myomatous tumors

occur as infrequently as cysts, but are a most serious complication in labor. Güder gives the following statistics regarding mother and child in eighteen cases taken from the literature:—

	Lived.	Died.	Result Not Given.
Mother	11	4	3
Child	4	7	7

Fibroid neoplasms occur at any age, and, according to Güder, they were found in larger proportion in I para (eight times in primiparæ, twice in multiparæ). This neoplasm may have its seat at any part of the vagina and is usually noticed after labor has commenced. In some cases the growth was pedunculated, so that it prolapsed from the genital tract, and it was consequently detected during pregnancy. In others its presence was indicated during pregnancy by a profuse white discharge of the vagina. Therapeutics in such cases of obstacle to birth of the child are naturally most varied. The first class of cases are those in which delivery takes place spontaneously, although the growth, on account of its considerable size, obstructs the vaginal canal.

The best known case of this kind is the one reported by Porro, in which quite a large fibro-myoma, situated in the vesico-vaginal septum, obstructed the vagina. Nevertheless, there was a spontaneous delivery, the tumor being expelled before the head, and then remained fixed, so that the child's head came down without any difficulty. On the next day the growth was enucleated; the child was dead, the mother recovered.

When the tumor does not cause an

absolute obstacle to the passage of the fœtus, the latter may be delivered with the forceps, as is illustrated by the following cases: Gensoul, in a case of vaginal polypus weighing 22 ounces, applied the forceps and delivered both tumor and child.

In a case reported by Fischer, a fibroid tumor the size of a hazel-nut was the cause of obstruction, and the forceps were applied to overcome it. The neoplasm then became larger and the patient again became pregnant, and when seven months along it was extirpated, resulting in a normal labor at term.

There are other cases on record where delivery did not go so easily, both mother and child dying on account of the severe lesions inflicted. Virchow describes a retrovaginal tumor nearly the size of a grape-fruit. During labor, forcible delivery was attempted, resulting in a rupture of the vagina and fracture of the descending branches of the pubis, with death of the mother four weeks later.

Three cases are reported in which natural delivery could not take place and Cæsarean section was performed. In one of these cases the growth was fibro-cartilaginous; its situation is not given. In another the woman died twenty hours after from collapse. In all three cases the children were dead.

It is easily seen from what I have said that fibroid tumors are a most dangerous obstacle to the progress of labor, especially so if the neoplasm be large or immovable; or if, in a case of an immovable growth, labor has considerably progressed, so that one cannot replace or even remove it.

The treatment in cases of fibroids complicating pregnancy is, of course, subjected to the circumstances. If you should see your case during pregnancy I would advise you to remove the growth, especially when it is large, for my experience has been that surgical operations on the external genital organs or vagina of a pregnant woman are rarely followed by any complications or premature labor; but if proper antisepsis is not carried out there is great danger, and in proof of this I may mention McClintock's case, which was as follows: He removed, by the *ecraseur*, a fibroid polypus the size of a small egg, situated on the posterior vaginal wall. The patient was delivered two weeks later, died thirty-four hours after from septicæmia.

We now come to carcinoma of the vagina, which is a very rare affection, and still more so when complicated with pregnancy. There is, however, no doubt that this neoplasm may primarily attack the vagina—and considerable valuable evidence has been recently given by Hect.

One reason for the rarity of pregnancy when carcinoma is present is that coitus is painful or the tumor is an obstacle to the act. Another is that the secretions from the neoplasm appear to kill the spermatozoid; and, lastly, the affection is one usually occurring at an age when the woman is past the fertile period of life. However, this is not always the case, as Coley has reported a case of a woman of twenty-one, and Oliver one of a patient twenty-six, who were pregnant and had a cancer of the genital organs.

Carcinoma of the vagina, involving the external genitals or the portio vaginalis, is the most common form, the disease usually attacking the vulva and then invading the vagina.

In such cases pregnancy seldom remains undisturbed, for often the symptoms soon appear which bring to notice a disease of the genital tract. Either the patient complains of lancinating pains, or an exceedingly fœtid discharge, tinged with blood, will appear, and later on hæmorrhages of considerable gravity and carcinomatous cachexia show only too well the real nature of the trouble. There is one early symptom of carcinoma of the genital organs that I consider of greatest diagnostic value, and which was well illustrated in the case I showed you a few days ago, and that is a *profuse and nearly odorless watery discharge*. You will remember that the patient in question only complained of this symptom, which was rendered slightly bloody by coitus, and that on examination I showed you through the speculum that the cervix was well invaded by the neoplasm.

As in fibroids, the course of labor will be very different in different cases, always according to the extent and malignancy of the tumor. If the neoplasm is small, and consequently not advanced, spontaneous delivery of the child occurs, as in the cases reported by Bailly and Schelle. This is, however, unusual, as labor is the most often difficult, and sometimes is even impossible *per vias naturalis*.

I will give you in a few words some cases taken from the literature

as illustrations. In two cases perforation was necessary. In the first case premature labor was induced and perforation had to be done on the dead fœtus. Welponer applied the forceps in his case, whereby he delivered a living child, resulting in a rectovaginal tear, the mother dying twelve days after from sepsis. In a case reported by Olshausen he induced premature labor, while in another he first removed the carcinomatous mass with the sharp spoon and then induced premature labor. Haine extracted a living child by laparo-elytrotomy from a woman who had a perforation of the rectum due to the extension of the carcinoma, the vagina being narrowed to only a small opening.

Cæsarean section has been performed in cases of carcinoma four times to my knowledge. Leopold did Porro's operation, saving both mother and child, on account of a primary carcinoma of the vagina that was well advanced; while Cooke, in his case, did a Cæsarean section and saved the mother. In two other bad cases both mothers died, but both children were saved.

The prognosis of carcinoma complicating pregnancy or labor is very bad. Most of the patients have died in the two weeks following delivery, by sepsis, metastasis or exhaustion. For the child it is a bit better, the mortality being, generally speaking, about 65 per cent.

Surgical measures in this affection are of little value, as the affection appears to be hastened in its progress by the pregnant state, and consequently when the disease is discov-

ered it is generally too late to interfere. There is one local application that has a certain value in cancer of the genital organs, in that it renders the secretions odorless, prevents hæmorrhage to a considerable extent, and has a power to clean up the ulcerated surfaces. This is *terebene*. It should be diluted one-half its bulk with glycerine, and the mixture is applied by means of the tampon. By its use I have seen some really wonderful results in inoperable cases.

Sarcoma of the vagina is still more infrequent than carcinoma, and I am only aware of one case in which the affection was complicated by pregnancy — that reported by Bajardi. The patient, a I para, aged 25, had always been in good health. The neoplasm, which was situated far back on the posterior vaginal wall, had attained a considerable volume when the patient was eight months pregnant. The tumor was removed by the thermocautery snare and labor soon took place. The patient died a year later from a return of the growth.

In such cases, where obstruction at labor from the size of the tumor is forseen, operative interference during pregnancy is absolutely indicated in order to save the child. The chances for the mother by a radical operation are so small, as the neoplasm is sure to return, that a capital operation is out of the question.

Hæmatoma of the vagina is not often observed, although this tumor is often met with on the external genitals, extending more or less up

into the birth canal. Its formation before labor, and as an obstacle to the act, are also infrequent in occurrence, but many cases are reported where hæmatoma was a post-partum complication.

Reich speaks of a case of a pediculated hæmatoma of the vagina which was found during pregnancy. A profuse hæmorrhage occurred on account of a too great effort that the patient made. The tumor was opened and the sack put back into the vagina. Labor came about four weeks later, the tumor being then only a small nodule in the vaginal wall.

Schneider and Vogler have each reported a case of pregnancy which was complicated by a vaginal hæmatoma, and interference was necessary. Vogler applied the forceps, withdrawing a dead child; Schneider opened the tumor and quickly terminated labor. Perregaux opened a hæmatoma of the vulva which extended into the vagina, and then stuffed the cavity with iodoform gauze; the child was born on the same day without any complication before or after birth.

The prognosis of hæmatoma, in general, is not very good. According to Deneux, 22 patients died out of 62 cases of the affection, while for the children 41 survived.

As to treatment, open the tumor as soon as discovered, with great aseptic precaution, gently curette the interior of the sack with the dull spoon and pack the cavity with iodoform or euphen gauze.

The Removal of the Uterine Appendages for Uterine Myoma, with an Account of Twenty Cases.*

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LONDON, ENGLAND.

CONSIDERING that it is now twenty-two years since this operation was introduced, singularly few operators have published their results, either in sufficient number or in sufficient detail, to furnish the material necessary for a proper estimate of the true place of the operation in the surgery of uterine myomata. With the exception of Mr. Lawson Tait and Mr. Doran, no operator in this country has, so far as I am aware, published a complete series of his cases; and although Mr. Tait's list† is an important one, it omits many details, a knowledge of which is necessary before we can determine what cases are suitable for the operation and what are not. Mr. Doran's cases are reported in greater detail,‡ but the series unfortunately only extends to six. Still, as a sample of the *kind* of report that is needed, his paper is of considerable and permanent value. The reasons for this dearth of important contributions to the subject are probably not far to seek. In the first place, the operation resembles operations for the removal of cancer, in that the immediate results are of much less importance than the remote results. We want to know not so much whether the patient survived

the operation, which is important, as whether the object of the operation was attained, — in other words, whether the relief to the patient was complete and permanent. In order to afford this information, the report of a case must contain a detailed statement of the patient's condition when a considerable time has elapsed after the operation. The preparation of such reports involves great labor, and, in the case of hospital patients especially, is beset with difficulties that are often insurmountable. Again, the operation, though capable of affording immediate relief to the more pressing symptoms, is after all palliative rather than curative. It lacks the entire satisfactoriness of a successful hysterectomy. The patient awakes from her anæsthesia and finds her tumor still present, as large as before. However fully she has been made to realize this beforehand, the difference, in the mental effect upon the patient, of finding the tumor gone and of finding it still there, is very noticeable, and this difference reflects itself on the operator. When a patient's satisfaction is only of a moderate kind, the operator, being but human, is apt to be less proud of his performance and less disposed to place it on record. Besides the relief to symptoms even is not always immediate. Months may elapse before it is very marked. On the

*For table of cases the reader is referred to St. Thomas' Hospital Reports, vol. xxii.

†British Medical Journal, vol. ii, 1885, pp. 287-292.

‡Ibid., June 9, 1894, p. 1233.

other hand, it happens in some cases that although relief quickly follows the operation, it is not maintained; troublesome symptoms return. All these considerations have a tendency to check enthusiasm and diminish incentives to publicity.

The twenty cases here recorded are now published for the first time, and represent the whole of my personal experience of the operation.

For preparing the abstracts of the cases I am indebted to my friend and former pupil, Dr. R. Ackerley, whose valuable and willing help in this matter it gives me much pleasure gratefully to acknowledge.

CASE 1. — E. J., aged 40, single, suffered from excessive hæmorrhage due to a large fibro-myoma. After prolonged medical treatment as an out-patient she was admitted into St. Mary's Hospital, Manchester, in a condition of extreme anæmia, on February 6, 1886. Abdominal section was performed and both ovaries and tubes removed. The ovaries were cystic. Recovery uneventful. For some months after the operation there was very slight continuous uterine hæmorrhage, but no flooding. Ten months later the tumor was found to be much diminished in size, and the general health of the patient was very greatly improved.

CASE 2.—M. M., aged 44, married, was admitted into St. Thomas' Hospital September 10, 1889. She began to menstruate at sixteen, and was married at twenty. She had five children, the youngest being then six years old. No miscarriages. At her last confinement a portion of the placenta was retained, and had to be

removed manually. There was much hæmorrhage, and the patient had never been well since. Menstruation had been normal until eight months previously; since then it had been profuse and accompanied by clots; no continuous hæmorrhage. Six months before she suffered from bearing-down pain and from retention of urine, the catheter being required two or three times. The abdomen had been swollen for eight or nine months. Patient was excessively anæmic, and suffered much from constipation and occasional sickness.

On examination the abdomen was found distended from the umbilicus downward by a large tumor, smooth, regular, soft, and highly elastic, but non-fluctuating, situated centrally, moveable, and non-adherent to skin.

The upper limit of the tumor was $1\frac{1}{2}$ inches below the umbilicus. Dullness extended from the pubes to 2 inches below the umbilicus, and transversely to the extent of 6 inches. A uterine souffle was heard in the mid-line just below the umbilicus. The uterine sound passed $5\frac{1}{2}$ inches, the point being felt 4 inches above the pubes. The os was patulous and softer than normal. On September 27, there was less discharge, but the outline of the tumor could be felt above the umbilicus. On October 3, abdominal section was performed. Some ascitic fluid escaped. Both ovaries and both tubes were removed. The left ovary was slightly enlarged and cystic; left tube normal. The right ovary and tube were not easily reached, as they were situated in Douglas' pouch, to the bottom of which they were fixed by firm adhe-

sions. The uterine tumor was nowhere adherent. Douglas' pouch was cleansed by means of sponges passed behind the tumor, no douche used, and the abdominal wound was closed without drainage.

The patient made an uninterrupted recovery. The hæmorrhage which was present at the time of the operation gradually diminished, and ceased October 9, but recommenced slightly October 17. She was discharged well October 27.

February 21, 1894. — An attempt was made to discover the subsequent history of the patient, but she had left her former residence, and her local medical adviser did not know where she had gone.

CASE 3. — H. M., aged 41, single (primipara), was admitted into St. Thomas' Hospital December 7, 1889. She began to menstruate at fourteen. When seventeen she became pregnant, had a child at full term, made a good recovery, and has since been regular every four weeks. The flow was preceded and accompanied by pain and nausea, and lasted six days. In April, 1887, she first noticed a lump in the abdomen on the right side. In June, 1887, Dr. Gervis diagnosed a subperitoneal fibroid, and recommended non-interference. Since October, 1888, the tumor had evidently increased much in size, and had caused occasional attacks of pain shooting down the right thigh. Otherwise her health had been good. Five days before admission a period came on seven days before it was due. The flow was not copious, but was accompanied from the first by pain of a bearing-down character,

and later by severe pains in the lower part of the back. She had some sickness, and was obliged to go to bed two days before admission.

On palpation of the abdomen, which was not enlarged, a hard, movable, nodulated tumor could be felt in the right iliac region. On vaginal examination, behind the uterus, and attached by a pedicle or adhesion to its posterior aspect, could be felt the lower end of the tumor, depressing Douglas' pouch. The uterus lay to the right and in front; it was normal in length, freely movable, and not directly affected by movements of the tumor. The tumor was hard and nodulated, and its upper part, which reached to a level of about 2 inches below the umbilicus, was freely movable from side to side, but not upwards. It was not tender. On December 12, 1889, abdominal section was performed with an incision of 3 inches. The tumor proved to be a kidney-shaped subperitoneal fibroid, attached by a pedicle in the middle of its concave border to the middle of the posterior uterine wall. There were three or four subperitoneal fibroids like large peas without distinct pedicles, and there was a large, roughly cylindrical, nodulated outgrowth at the upper and right side of the uterus, with a broad uterine connection or pedicle, and a number of yellowish nodules on its upper surface. The only tumor removed was the large pedunculated one, which was easily enucleated from the uterine wall, as there was no direct communication between the tumor and the uterus. The tumor moved upon the uterus as by a ball-and-

socket joint. It weighed $6\frac{1}{2}$ oz., and measured 4 inches by $2\frac{1}{4}$ inches, and $2\frac{1}{4}$ inches in thickness.

After enucleation the edges of the peritoneum and capsule bled freely, but was controlled by stitching the edges together with fine silk sutures. The tubes and ovaries, which were normal, were removed in the usual way. The peritoneum was sponged out, and the abdomen closed without drainage. The patient had some sickness during the first four days after the operation, but otherwise did well, and was discharged January 10, 1890. On December 18, 1890, patient was well; menstruation had occurred every three months, with some pain at the first two periods, but none since; no intermenstrual pain since the operation. In 1891 she menstruated only twice, in June and October; the latter period lasted five days, but the former was so slight as not to require the use of a napkin. On March 2, 1894, I found her in excellent health and free from pelvic pain. Menstruation had not occurred since 1891. No tumor could be discovered on bimanual examination.

Remarks.—The main tumor in this case, considered in reference to size, was the pedunculated subperitoneal myoma. But though it was evident, immediately on opening the abdomen, that this tumor was so loosely attached to the uterus that it could be easily removed, it was equally evident that it could not be the cause of the symptoms, and that therefore its removal, however desirable in itself, would not fulfil the chief object of the operation. The removal of the

uterine appendages was therefore proceeded with in order to ensure the gradual diminution of the interstitial tumors, and so relieve the dysmenorrhœa. The after history shows that these results were attained.

The mode of connection between the pedunculated tumor and the uterus was interesting. In the pedicle there was a solution of continuity in the myomatous tissue, one part of the stalk being continuous with the tumor, and one part with the muscular tissue of the uterus. Each part ended in a smooth convex surface, the two portions being in immediate contact with, and freely movable upon, each other. The unusual mobility of the tumor was thus fully accounted for. Its removal was of course singularly easy.

CASE 4.—J. R., aged 31, single, was admitted into St. Thomas's Hospital May 5, 1890. She had been severely burned at the age of five. Immediately afterwards she had a discharge of blood from the vagina, and had menstruated regularly ever since. The periods had been profuse, especially on the second day, and lasted a week. If the flow happened to be scanty she suffered much pain. She had noticed a lump in the abdomen for six or seven years, but had not paid much attention to it until a few months before admission, when it was obviously growing rapidly, and pressed on the rectum. At the time of admission she was incapacitated for work, as she could not sit long without great discomfort. She was a woman of stunted stature and short limbs. Examination of the abdomen showed it to be prominent

over the whole of the lower part, especially on the left side. Palpation revealed a very hard, smooth tumor, centrally situated, reaching from the pubes to a point one and three quarter inches above the umbilicus. It was slightly movable from side to side, dull on percussion, and yielded no thrill or fluctuation. Pulsation of the aorta was transmitted through the tumor. Vaginal examination showed that the os uteri was three inches from the vaginal orifice, pushed far back and directed downwards. The cervix was fixed. The tumor could be felt through the anterior and lateral fornices as an immovable mass. The sound passed first to the left, then backwards, and finally forwards to a length of seven and a half inches. On May 8, abdominal section was performed. Both ovaries and tubes were transfixed, tied, and removed. The left ovary was easily reached, but the appendages on the right side were deeply situated behind and to the right of the tumor, and there was some difficulty in reaching them. No douche or drainage, the abdominal wound being closed in the usual way. Some vaginal hæmorrhage, dark in color, began the day after operation. Three weeks later she left the hospital, having made a good recovery. A very slight vaginal discharge was still present. She reported on June 27, and again on October 24, 1890. On both occasions she was in very good health; no discharge, the tumor was smaller and more movable.

February 23, 1894.—“Patient looks and feels in much better health than before the operation. She can walk

a distance of three or four miles without fatigue, whereas before the operation she could not walk half a mile. She is able to follow her occupation without the least inconvenience. There is no discharge, monthly or otherwise. After leaving the hospital she had a hernia the size of a pigeon's egg at the lower end of the incision after straining at stool. She wore a belt for a time, but has left it off for twelve months. The protrusion remains, but causes no pain or inconvenience; it disappears at night. The patient herself is unconscious of there being anything left of the uterine tumor. There is, however, to be felt on deep palpation a lump, globular in shape, about $2\frac{1}{2}$ inches in diameter, fixed and central.”

Remarks.—In this case the relief aimed at by the operation was realized to the fullest extent. No more typical example could be adduced of the value of the proceeding in suitable cases. The patient's life had become a burden to her, and the prospect of having to give up her profession was making her very miserable. Within a very short time all her discomforts had disappeared, and she is now happy and bright, enjoying her work and feeling it no trouble.

CASE 5.—S. B., aged 38, single, first seen May 3, 1890. She began to menstruate at fourteen, the periods were regular and unaccompanied by pain. Recently the periods had been more frequent and profuse, and she had had more discomfort. There had been no intermenstrual discharge. The bowels had been very irregular; no bladder trouble. For some time she had observed that her abdomen

was somewhat prominent, but the enlargement was not sufficient to attract the notice of her dressmaker. The existence of a tumor was first discovered on May 2 by Dr. Maguire, whom she had consulted from time to time about her general health.

On examination the abdomen was found to be very prominent, and on palpation there could be felt a firm, highly elastic, smooth uniform tumor, rising from behind the pubes in the centre of the abdomen to the level of a line $3\frac{1}{2}$ inches above the umbilicus, and moveable from side to side. *Per vaginam* the cervix was found to be normal, and there was no encroachment upon the vagina. The sound passed $5\frac{1}{2}$ inches into the centre of the tumor.

On May 31, 1890, she was seen again. The tumor was then found to rise to a point four inches above the umbilicus.

On July 18, 1890, it was found that the tumor was growing larger; it reached half an inch higher, and the abdomen altogether was larger than in May; it was therefore decided to remove the appendages.

On September 6 abdominal section was performed in St. Thomas' Home. Both ovaries and tubes removed. On the left side the tube and ovary, which were situated high up, were ligatured and removed separately, to avoid the greatly distended veins in the broad ligament. The right ovary and tube, which were situated low down in front of the uterus, were secured by a double ligature and removed together. The abdomen was closed without using douche or drainage.

She made a good recovery from the operation, except considerable pain in her legs and back, and was suffering from this pain when she left the Home on September 25.

On February 5, 1891, rather more than four months after her operation, she wrote to say that two days previously a slight hæmorrhagic discharge had come on, for the first time since her operation. She had been able to resume her work a week before writing.

On October 17, 1891, she was seen again. Since February she had been unwell every two months, and had lost as much as she did before the operation. She had not recovered strength, and did not feel able to do as much as formerly. She had increased in size, and noticed that she was bigger just before the commencement of a period.

January, 1892.—She had not been unwell since October, except for a very slight discharge in December.

The patient was sure the tumor was smaller, but backache and general discomfort remained as before.

September 30, 1893.—The patient had only been unwell once, more than a year ago, since January, 1892. The tumor, though it still varied in size, was smaller, but the patient complained still of severe backache and of fullness in the head and flushing. There was some tendency to hernia, and a belt was ordered.

December 9, 1893.—No further menstruation had occurred. Patient looked very well, but complained of backache.

Remarks.—The result of the operation in this case was disappointing,

partly owing to the large size of the tumor, and partly to the highly neurotic constitution of the patient. The local discomforts have been but little relieved, and, with regard to the effect upon the tumor, repeated measurements made at varying intervals after the operation showed that although during the first few months its size diminished, a subsequent enlargement took place, so that at one time the measurements were precisely the same as before the operation. For the last two years the size has again been slowly diminishing. On the whole I am inclined to think that abdominal hysterectomy would, in this case, have been the better treatment.

CASE 6.—L. W., aged 34, single, schoolmistress, was admitted into St. Thomas' Hospital September 22, 1890. She began to menstruate at thirteen, the periods had been regular and moderate until three years previously. She had suffered pain on the day preceding the period and on the first days of the flow. She noticed an abdominal swelling three years before, but no examination had been made until June, 1890, when a doctor found she had a tumor. Since October, 1887, when she fell down a short flight of stairs, the periods had gradually become more profuse; and in the spring of 1889 she lost so much during the first three days of a period that she had to give up her work and go to bed. Giving up her work involved closing the school. The dysmenorrhœa had increased, and had become very severe for the first three days. She was pale but not emaciated.

On examination the abdomen was found to be distended over the lower portion by a tumor reaching higher on the right side than on the left, but otherwise centrally situated. The swelling was smooth and uniform, no nodules or lobes were felt. In the middle line dullness on percussion extended one inch above the umbilicus, and on the right side one inch higher. At the level of the umbilicus dullness extended transversely five inches and a half to the right and two inches to the left. The uterine souffle could be heard on both sides, but most clearly at a point five inches above the level of the pubes, and three inches and a half to the left of the middle line.

On vaginal examination the tumor could be felt through the anterior vaginal wall, and a sound passed into the bladder showed that it lay behind the tumor.

On September 25, abdominal section was performed. Both ovaries and tubes were removed. The left ovary was bound down by adhesions, which had to be separated. The right appendages lay posteriorly, and were difficult to reach. No douche or drainage; the abdomen was closed in the usual way. The appendages were normal.

After the operation the patient had a good deal of pain, and rather more hæmorrhagic discharge than before. On October 3 she complained of pain in her right leg, and the next day there was tenderness over the external saphenous vein on that side. The temperature, which had been about 100° in the evenings, rose to 101.2°. After this she grad-

ually improved. The temperature fell and the hæmorrhage became less, and on October 22 she left the hospital fairly well. She attended at the hospital on November 21, and was then in very good health. Constant metrostaxis, slight in quantity.

In September, 1891, she was seen again. She was looking stout and well. She had not lost a single day's work since the operation, and had not suffered in any way. There was still slight continuous metrostaxis, which increased at the monthly periods. Five months later she was found much the same. In April, 1893, she came to the hospital. It was found that she had no hæmorrhage at all for three months; the tumor was smaller, and she was in excellent health. There was some mucous discharge, but not sufficient to prove inconvenient.

April 13, 1894.—After her last visit to the hospital the patient had no discharge until September, 1893, when she had a hæmorrhagic discharge, which lasted until November. The amount lost was generally slight, but on several days it was profuse. During these three months she suffered pain similar to that she had before the operation. Since November there had been no discharge. Her health was very good, and she was able to do anything she wanted. Her only trouble was constipation, but there was no pain on defæcation. The tumor had become smaller, especially during the last year. Its upper limit was now two inches below the umbilicus, and the greatest transverse measurement was five and a half inches. There was slight

bulging at the upper extremity of the abdominal wound.

Remarks.—The operation in this case was completely successful. There was constant though slight metrostaxis, with increased flow at the monthly period, for two and a quarter years; there was amenorrhœa for eight months, followed by a varying amount of hæmorrhage extending over a period of two months, since the end of which time, now eight months ago, the hæmorrhage has not recurred. The patient has lost all her discomfort and is in excellent health, and has not lost a day's work since the operation.

CASE 7.—H. H., aged 37, married, was admitted to St. Thomas' Hospital November 20, 1890.

She began to menstruate at twelve, and was regular at intervals of twenty-eight days up to the date of her marriage. The periods lasted seven days; there was pain on the first day. She had been married three years, and had one child at full term in June, 1888. No miscarriage. The periods had been more frequent and profuse since marriage, and especially since the birth of the child. There had been severe hæmorrhage between the birth of the child and the delivery of the placenta, which had to be removed manually. About a year ago she had retention of urine, for which the catheter was required. This difficulty recurred several times in the succeeding months. About six weeks before admission her doctor discovered a tumor.

The patient was a bright, intelligent woman, extremely anæmic.

On examination, the abdomen was found to be rendered slightly prominent by a soft, elastic, solid tumor, rising three and a quarter inches above the symphysis pubis, and occupying the whole breadth of the lower part of the abdomen. On vaginal examination the cervix was found in the middle line close behind the symphysis pubis. The sound passed three inches, the point being felt externally one and a half inches above the middle of Poupart's ligament on the right side. The whole of the pelvis was occupied by a smooth, elastic, soft, solid tumor, bulging into the posterior fornix and pressing on the rectum.

On December 1 the operation of removal of the uterine appendages was performed. The tumor, having been exposed by an incision three inches in length, was found to be a uterine myoma, without adhesions, accurately filling the cavity of the true pelvis. Both ovaries and both Fallopian tubes were removed. There were no adhesions, and the ovaries, except for a few small cysts, were healthy. There were large varicose veins in both broad ligaments. The operation offered no special difficulty; a little oozing from the left stump was arrested by a second ligature. No douche or drainage was used.

The patient made a good recovery, the pain gradually subsiding. A little hæmorrhagic discharge came on the day after the operation, but it was never considerable. She left the hospital on December 31 well, but still extremely anæmic. At Christmas, 1893, she reported herself

as being extremely well, and as having regained her color. On March 12, 1894, she wrote, saying that she had had no discharge since the summer of 1893, that her abdomen was getting smaller, and that her general health was excellent.

Remarks.—This was a typical case for this operation; the hæmorrhage had been so profuse as to bring about an alarming degree of anæmia, and the tumor, being chiefly intrapelvic, was producing pressure symptoms and would have been difficult to remove by hysterectomy. The result of the operation has been quite satisfactory, though menstruation did not finally cease for two and a half years.

CASE 8.—R. J., aged 32, single, was admitted into St. Thomas' Hospital, January 27, 1891.

She began to menstruate at sixteen, and was regular every four weeks. The periods lasted four or five days, and were always profuse. Ten years before admission she fell down stairs; after this she had vaginal hæmorrhage for about ten days with pain, and had to remain in bed for about a week. For the last twelve months the periods had been more profuse. She noticed a swelling in the lower part of the abdomen about one year ago; this first appeared on the left side. She suffered a good deal of pain, especially on the right side. On examination the abdomen was found prominent by two separate masses, that on the right side being less prominent, but extending higher than that on the left. On palpation in each iliac region was felt a distinct, firm,

globular, solid, and movable mass. The one on the right side, rising high out of the pelvis, measured three inches transversely and four inches vertically; its upper border was five inches above the symphysis pubis, and its outer border was five inches from the middle line. The mass on the left side extended outwards nearly to the anterior superior iliac spine, and had a vertical axis of $2\frac{3}{4}$ inches. Both these masses were continuous with an irregular mass which rose $4\frac{1}{2}$ inches above the symphysis pubis. This mass was everywhere dull on percussion, the left iliac region being universally dull, and the right on its inner half. On vaginal examination a large mass could be felt on the right posteriorly, pushing the cervix over to the left. The sound could be passed with much difficulty $4\frac{1}{2}$ inches.

On February 5 the uterine appendages were removed. The uterine tumor, though movable, could not be lifted out of the pelvis. Both ovaries and tubes were removed. The left appendages were found behind the mass growing from the left cornu; they were so difficult to reach and bring into view that the ligature had to be applied close below the ovarian tissue, and a portion of the ovary was left in the pedicle on the distal side of the ligature. The right appendages were lying in front of the mass growing from the right cornu of the uterus, and were more easily secured. No douche or drainage was used. There was a good deal of pain and vomiting for the first forty-eight hours after the operation, but otherwise she did well. The tem-

perature never rose above 100° . She made a good recovery, and left the hospital on March 6. On April 24 she was found to be very well; she had menstruated twice since leaving the hospital. On August 4 she was very well. She had no pain, but soon got tired if she exerted herself. Menstruation was regular. The tumor was found on bimanual examination decidedly smaller.

January 26, 1892. — Was very well, menstruation regular. There was a small hernia at the lower end of the abdominal cicatrix.

March, 1894. — Paroxysmal pains in the abdomen and down her right leg. The pain was very severe, occurring at intervals every day.

May 21, 1894. — Feeling considerably better since last note. The last two periods have been moderate in quantity and duration, and less painful. Her work has been lightened, and she can now do it comfortably. There is sometimes a pain in the right iliac region after much walking.

There is a very slight hernia at lower angle of incision.

The only lump to be felt from the abdomen is a very movable one in the right iliac fossa. It is of a size about equal to that of a duck's egg. Its upper limit is a finger's breadth below the level of the umbilicus, and its lower is on a level with the anterior superior spine of the ilium. No tumor can be felt on the left side. No vaginal examination made.

Remarks. — Menstruation has not yet been arrested in this case, although more than three years have elapsed since the operation, but the tumors have much diminished in size,

and the symptoms have gradually subsided. The beneficial effects of the operation have been somewhat long in showing themselves, and even yet are not so marked as one could wish. The patient is still unable to do her full work without fatigue, and her present condition of comfort is partly due to the consideration shown her by her employers.

CASE 9. — J. B., aged 44, single. She began to menstruate at the age of sixteen. From the first she suffered much pain, and had to go to bed for a few hours or longer. The periods recurred every four weeks, and lasted three or four days. About ten years previously the periods began to be more profuse and to recur at shorter intervals, and the pain became more severe. Eight years ago, when she was abroad, a small growth was removed from the neck of the womb. After this her symptoms were relieved until four years ago, when she began to feel very ill; the pain became more severe and the flow more profuse. In April, 1888, she was in a provincial hospital, where she was operated on for removal of the ovaries, but only one ovary was removed. Up to that time she had not been aware that she had any tumor. After the operation she was better for six months, then the pain and loss became much more severe, and the tumor was evidently growing rapidly. She was quite unable to follow her occupation. The periods lasted ten days, with excessive paroxysmal pain the first two days. Between the periods there was a continuous white discharge.

On examination the lower part of

the abdomen was found occupied by a soft, elastic, solid tumor, causing decided prominence of the abdomen, rising nine inches and three quarters above the symphysis pubis (two inches above the umbilicus), and measuring seven inches in its greatest width. Vaginal examination showed that the tumor did not encroach upon the vagina. The sound passed four inches. Some cervical mucous polypi were found.

On February 9 abdominal section was performed for the purpose of removing the remaining ovary. The left ovary and tube were found lying deeply down on the left side, and were brought into view, ligatured, and removed. No trace of the right appendages could be seen. The right side of the tumor was adherent by strong bands to the anterior abdominal wall. A small pedunculated, subperitoneal fibroid, situated just below the old abdominal cicatrix, was removed. The edges of the capsule were brought together with fine silk sutures. The abdominal wound was closed without douche or drainage.

Ten days after the operation, on March 11, a vaginal discharge of blood came on, which late in the day and on the next day was very profuse. The patient had also a good deal of pain, especially on the left side.

The pain was relieved by injections of morphia, and a day later the discharge was less and continued to decrease. On the 16th the stitches were removed and the wound was healed. She continued to do well until February 25, when her temperature went up to 100.4°, and on

the 27th in the evening it reached 102.6°. On February 27 a large clot was passed *per vaginam*, and two days later a much larger clot partly decolorized was passed, with a good deal of hæmorrhage. On March 2 an anæsthetic was given, and she was put in position for removing the mucous polypi. It was then observed that a small clot was hanging from the vulva. On passing up the finger this was found to occupy the whole of the vagina, the cervix, and part of the cavity of the uterus. It was dark and offensive. The clot was removed. The cervix was sufficiently dilated to admit a finger; it was then found that the cavity of the uterus contained no polypus or clot. The tumor could be felt bulging as a large smooth mass, and pushing the uterus towards the right. The mucous polypi were removed piecemeal by torsion.

Very little discharge followed this operation, and the patient was much relieved. She made a good recovery (having no further severe pain) but for a few days at the beginning of April, when she felt unwell, and the urine was found to contain blood. This symptom cleared up, and she left the Home on July 14 in good health, though the urine still contained a slight trace of albumen.

She was readmitted to the Home on October 17, 1891. From May to the end of July she had had no colored discharge. Then a slightly yellowish watery discharge came on, and lasted three weeks, when it increased in quantity, and ten days later a copious hæmorrhage lasting three days occurred. This was followed

by relief to certain symptoms—pain on the left side, giddiness, and general malaise—which had lasted for some months. The watery discharge had recurred. The patient had not lost flesh. The tumor was very hard on the left side, and on that side the inguinal glands were enlarged and tender.

January 13, 1894.—The patient wrote saying that she was much better and stronger, and that she thought she would soon be well. A sinus in the left groin, which had been open for more than a year, still gave trouble. It had been scraped and poulticed.

On February 8, 1894, she wrote to say the wound was healing. A small knot of thread had come away, and since then she had been much better. She was able to do things she had not done for some years, but was still an invalid.

On July 4, 1894, in answer to a letter of inquiry, she wrote as follows:—"I think the tumor is a *little* smaller, and not quite so hard. Menstruation has not ceased. The attacks are not quite so frequent, but the loss at those times is very great, lasting generally from six weeks to two months. I suffer little pain during the time, but before it comes on have great pain in my back and limbs. I am always kept to the sofa, and some part of the time in bed, as it increases the loss to move. The tumor always seems much smaller after it, but the weakness is terrible. . . . I cannot walk much, I always feel giddy, as if I might fall. . . . I do really think I am better in many ways."

Remark.—The letter above quoted shows the result of the operation in this case to have been, if not a complete failure, very nearly so.

CASE 10.—H. P., aged 26, married, was admitted into St. Thomas' Hospital, March 24, 1891. Menstruated at the age of seventeen, regularly at intervals of twenty-eight days, up to the time of her marriage, seven years previously; never pregnant. Since her marriage her periods had been more profuse, but no intermenstrual hæmorrhage. Had noticed a lump two years before admission; it had been growing larger, and one or two other lumps had appeared. She had no pain, but had increased frequency of micturition.

On examination no visible alteration of the abdomen was discovered. On palpation a lump could be felt in the right iliac region. It was about the size of a small orange, movable, smooth, hard, and solid. Close to it was a second smaller tumor. In the middle of the lower part of the abdomen, and extending towards the left side, an indistinct, deeply-seated, solid mass could be felt. There was no dullness on percussion. The upper border of the tumor was $5\frac{1}{2}$ inches above the symphysis pubis.

On vaginal examination it was found that the lumps on the right side moved with and slightly upon the uterus, as though connected to it by little more than capsule. The left fornix was obliterated by a large hard swelling, continuous with that felt in the lower part of the left side of the abdomen. The cervix was completely fixed by the tumor. The sound passed $4\frac{1}{4}$ inches.

On April 9, operation was performed. An incision of $3\frac{5}{8}$ inches was required. Both ovaries and both tubes were removed. The left appendages were easily found. The right appendages were removed with difficulty, being situated deeply in the pelvis behind the subperitoneal tumor, which had to be drawn up to allow of the necessary manipulations. They were also held by deeply seated adhesions. During the search for the right appendages the patient suddenly ceased breathing, and the operation had to be temporarily suspended. The tubes and ovaries were normal. The large pedunculated myoma, measuring $3\frac{3}{8}$ inches by $2\frac{1}{2}$ inches, was then removed. It was quite smooth and non-adherent, and had a short pedicle the size of a man's thumb. The capsule was divided three-quarters of an inch all round above the pedicle, and was stripped off down to the pedicle, which was then divided. The edges of the capsule were united by fine silk ligatures, which at once controlled the little bleeding.

Beneath the peritoneum covering the lateral wall of the pelvis a hard, movable mass, $1\frac{1}{2}$ inches wide and $1\frac{1}{2}$ inches long, was felt. It could not be brought into view, but was thought to be a small myoma which had undergone calcareous degeneration. The pelvis was sponged out, and the abdominal wound closed. She made a good recovery, which was delayed only by an attack of acute lobar pneumonia.

April 16, 1894.—The patient wrote to say that she felt very much better since the operation. She had men-

struated only twice in two years; she did not feel the lumps. She had cramps in the left leg, and suffered frequently from "hot flushes." She also mentioned that she occasionally had a pain in her right side, which she attributed to having to go up and down stairs frequently.

Remarks.—As in Case 3, the operation here included the removal of a pedunculated subperitoneal myoma. The result of the entire operation has been quite successful in causing a diminution in the size of the interstitial tumors, and in restoring the patient to a life of comfort and usefulness. The hæmorrhage appears to have practically ceased at the end of the first year.

CASE 11.—D. L. M., aged 34, married, first consulted me on February 4, 1891, on account of a large single myoma of the uterus, reaching to the umbilicus. She had increasingly profuse hæmorrhage at the menstrual periods, accompanied by severe pain, necessitating confinement to bed for several days every month. The tumor encroached very little, if at all, on the vagina. About five months previously she had some alarming symptoms after an attack of menorrhagia—chiefly a tendency to syncope and hysteria, with loss of speech. This was considered by the medical men who saw her to be due to cerebral anæmia. The patient was a tall, well-built, healthy-looking woman, anæmic from the menorrhagia. She had been married many years, but had never been pregnant. I advised removal of the uterine appendages.

The operation was performed May 3, 1891. The abdominal wall was

very thick from deposit of fat. Both ovaries and Fallopian tubes were removed. The left appendages were situated laterally, and were easily reached; the right appendages were deeply situated in the pelvis, but were easily removed. They were healthy and non-adherent. No drainage was used, and the abdominal wound was closed in the usual way.

From the first the patient did badly. There was no rise of temperature, but the patient suffered from flatulent distension, pain, sickness, and other symptoms indicating some intestinal obstruction, as well as from more or less hæmorrhage. The flatulence was relieved to some extent by frequent enemata. She was seen in consultation by Mr. Pitts and Dr. Sharkey, but, in spite of all efforts to relieve her, she gradually sank, and died on May 13, ten days after the operation.

The question of reopening the abdomen was fully and repeatedly discussed, but for a time the vomiting ceased, and it was hoped the bowel had rectified itself. When the alarming symptoms returned, the patient was not in a condition to bear an operation. No post-mortem examination.

Remarks.—The operation in this case was so easy and satisfactory that I was quite unprepared for the disaster which followed. I can only account for the persistent vomiting by supposing that during the rotation of the tumor, which was rendered necessary in order to reach the appendages, a loop of small intestine must have slipped down behind it,

and become nipped between the tumor and the back of the pelvis.

As there was no autopsy, it remains uncertain whether death was due to some such cause as I have suggested or to peritonitis. It would probably have been better in this case to perform the more radical operation of abdominal hysterectomy.

CASE 12.—M. C., aged 46, married, was admitted into St. Thomas' Home July 9, 1891.

She began to menstruate at fifteen. The periods were always profuse, and latterly had been more frequent and excessive. She had been married for twenty-three years, and lived for twenty years in South America. One miscarriage two years after marriage; not pregnant since. Had not felt well for ten years, and four years ago a swelling was noticed. She was decidedly anæmic.

On examination the abdomen was found to be rendered prominent by a rounded, soft, elastic, solid, symmetrical tumor, centrally situated, rising from the pubes to the umbilicus. The cervix uteri was high up, but normal. The sound passed behind the main mass to a distance of $6\frac{1}{2}$ inches.

On July 11 the abdomen was opened with a view to removal of the uterine appendages. Both sets of appendages were found displaced and adherent. The right ovary and tube were secured as far as possible, but no proper pedicle was obtainable, as the tumor had separated the layers of the broad ligament and the mesosalpinx. A portion of the ovary was left on the distal side of the ligature. On the left side there was a

hydrosalpinx, which was punctured to make sure it was not intestine, which it resembled. The left ovary was behind the uterus and adherent to it. It was only just within touch, and as it could have been removed only after much tearing, which in the extremely vascular condition of the parts was not considered justifiable, as the site of the hæmorrhage would have been out of sight and control, it was decided to ligate the tube near the uterus and leave it.

There was some oozing, and a drainage-tube (which was removed next morning) was inserted.

Two days after the operation slight metrostaxis, which continued for eight days. She made a good recovery from the operation; her general condition was much improved, and she became less anæmic. She left the Home on August 7.

For a fortnight previously there had been some œdema of the left thigh and foot. On September 18 she was seen again. She had been unwell, and had much pain. Eighteen days later another period, also accompanied with pain. Otherwise she was better, and was stronger and stouter. After walking there was swelling of the left leg from the thigh downwards. The tumor was not larger; indeed, as evidenced by the patient's dress, it was smaller. The patient has been lost sight of.

Remarks.—The operation in this case was incomplete, it being found impracticable to remove the left appendages without grave risk. The ultimate effects of the operation are at present unknown.

CASE 13.—E. R., aged 40, mar-

ried, was admitted into St. Thomas' Hospital, February 17, 1892. She began to menstruate at fifteen, and (except for six months) had been regular at intervals of twenty-eight days until twelve years previously. Her periods, which had previously lasted seven days, became prolonged to fourteen or fifteen days, and the loss for the first week was excessive. Often there was considerable dysmenorrhœa. She had been married for three years, but had never been pregnant. One year before admission patient began to suffer from faintness, headache, and general malaise. Seven months before she had, for the first time, localized pain in the lower part of the abdomen, and noticed a lump, which did not increase until one month before admission. In the previous August patient had suffered from retention of urine, and for a fortnight the catheter was required. This was succeeded by some incontinence during both day and night, which had lasted until recently.

On examination the right iliac region was found to be rendered prominent. A distinct, solid, smooth, firm, and freely movable tumor could be felt in the lower part of the abdomen, almost central, and reaching from the symphysis pubis to the umbilicus. This was dull on percussion over an area of $5\frac{1}{2}$ inches vertically and $6\frac{1}{2}$ inches transversely. Vaginal examination showed the anterior fornix to be obliterated, the posterior large and capacious. The sound passed $5\frac{3}{4}$ inches in a direction first upwards and to the right, then to the left. The convexity of the canal was towards the right.

On March 10, the operation was performed. The uterus was found to be rotated on its long axis, with the left lateral aspect looking directly forwards. The left appendages were easily found. The right appendages lay above and to the extreme right, and were severed without difficulty. No adhesions. Both ovaries and both tubes were removed. The abdomen was closed without douche or drainage.

The patient went on very well until the 17th, when she complained of some pain in the abdomen, and a dull aching and numbness in both legs. There was some œdema of the shins and ankles. The catheter was required. These symptoms were accompanied and preceded by a rise in temperature, which gradually subsided, though for several days micturition was painful, and the urine contained a small quantity of albumen. She was discharged in good health on April 13.

On August 19, she was looking well. There were still a little aching and some occasional numbness in the right leg and thigh. She had not menstruated since the operation.

On November 18 she was very well; menstruation had not come on. The condition of the leg remained the same, but she had no other trouble.

February 21, 1894.—Her local medical attendant wrote, "Her health has improved since the operation. Complete cessation of catamenia from time of leaving the hospital, and no uterine hæmorrhage. I cannot feel any tumor through the abdominal wall."

Remarks.—In this case menstruation and all uterine hæmorrhage,

ceased from the date of operation. There were symptoms pointing to thrombosis of the iliac veins a week after the operation, but these gradually subsided. The report as to her condition a year and eleven months after the operation is completely satisfactory.

CASE 14.—M. B., aged 33, single, was admitted into St. Thomas' Hospital on April 27, 1892. She began to menstruate at twelve; the periods recurred regularly, but the flow was profuse and accompanied by pain. The loss had been increasing and the pain had been more severe for the past three months. Six months previously a physician discovered a tumor while examining the abdomen on account of obstinate constipation.

For the past two and a half years she had been suffering from swelling of the left calf and ankle after standing or walking. She had been troubled with frequency of micturition both day and night. She complained of dull pain in the left iliac region, which occasionally passed down the inner aspect of the left leg. She was pale and rather thin. On examination the abdomen was found to be prominent in the left iliac region, and a tumor could be felt occupying the pelvis, chiefly on the left side, its upper limit reaching one inch above the umbilicus and seven inches above the pubes. It felt fairly hard and uneven, and was absolutely dull on percussion. The width of the dull area at its broadest part was 7½ inches.

Bimanual examination under an anæsthetic showed the os uteri to be low down, and the cervix pushed for-

wards against the symphysis. The vaginal roof posteriorly was depressed by a round solid mass above it. High up on the right side the right broad ligament could be felt put on the stretch in front of a rounded lump, which could be felt pressing the ligament forward. This lump was high up, and did not depress the vaginal roof. The main mass of the abdominal tumor conveyed an impulse directly to the cervix, but not to the mass behind it. Pressure on the mass on the right side was not transmitted to the cervix. On rectal examination the lowermost growth could be felt bulging into the rectum and flattening the bowel so as barely to allow the passage of the finger. The mass was globular and about the size of a Tangerine orange, and was attached by a broad base to the uterus. This was the same mass that depressed the vaginal roof. The bladder was shown by the sound to lie in a sulcus to the right of the cervix, and between the cervix and the posterior lump. The uterine sound passed 5½ inches in the middle line.

On May 5, operation was performed. Both ovaries and both tubes, which were healthy, were removed. There was great difficulty in securing the left appendages, as they were deeply seated and tightly adherent behind the main mass of the tumor, which had separated and grown between the layers of the broad ligament. The right appendages, though they lay in front and were easier to reach, could not be drawn into the line of incision, so that difficulty was experienced in ligaturing and remov-

ing them also. No douche or drainage was used. Her progress was all that could be desired, and she left the hospital well on June 4.

On February 24, 1893, was seen again. Since operation menstruation had been regular and profuse until three months previously; since it had not recurred. The tumor was distinctly smaller, reaching only four inches above the pubes. Patient was very well and much stouter. She had married since the operation. On April 21 the patient was very well, and the tumor was smaller.

Remarks.—The result of the operation in this case was extremely satisfactory. The general health has greatly improved, and the tumor has undergone marked diminution in size. Menstruation continued and remained profuse for six months after the operation, when it suddenly and finally ceased.

CASE 15.—E. K., aged 35, single, was admitted into St. Thomas' Hospital on June 2, 1892. She began to menstruate at fourteen, and was regular every twenty-eight days, the periods lasting a week, and giving no trouble until two years ago, when she began to suffer much pain at the time, accompanied by swelling and pain in the left leg. In 1890 she was confined to bed from July to November, and was unable to work until February, 1891. After that she was fairly well until August, 1891, when she began to lose a good deal at her periods, which lasted longer than before — sometimes as long as three weeks. About that time the patient, who had been stout before, became much thinner except over the abdo-

men, which increased in size. She lost her appetite and suffered much from nausea. During the six or seven months before admission she had had a heavy feeling in the abdomen, often amounting to pain, and latterly the pain had been much more severe and the monthly loss much greater. She was an anæmic woman. Both legs were œdematous, the left being the worse.

On inspection *linæ albicantes* were seen over the left iliac region and the upper part of the left thigh. The lower two-thirds of the abdomen were found to be occupied by a smooth, firm, elastic, rounded swelling, slightly movable from side to side, and more prominent on the right than on the left side. Movable structures like the ovary and tube could be felt on the right side when the tumor was pushed over to the left, and on the left side when pushed to the right. There was dullness over an area extending laterally to lines drawn vertically from the junction of the middle with the outer third of Poupart's ligament on each side, and upwards to a line two inches above the umbilicus. The upper border of the tumor was eleven inches above the symphysis pubis. On vaginal examination the cervix was found high up about the level of the top of the pubes. No part of the tumor could be felt in the pelvis. The sound passed $7\frac{1}{2}$ inches. Any impulse imparted to the abdominal tumor was transmitted directly to the cervix. Two separate small lumps could be felt on the right side of the main mass.

On June 15 abdominal section was

performed. Both ovaries and both tubes were removed. The left tube and ovary were healthy. The right ovary was cystic, and measured 4 inches by $2\frac{1}{2}$ inches. The uterus was generally enlarged. There were no adhesions except a few long bands between it and the left ovary. No douche or deep sponging was used, and the abdomen was closed without drainage.

On the evening of the 17th, and again on the 18th and 19th, there was occasional vomiting with intestinal distention, which was only partially relieved by much medicine and many enemata.

During the evening of the 19th the house physician reported her to be extremely ill, her pulse being quick and her face pinched; her temperature, which had been satisfactory, was rising. I went down to see her at once, and feeling sure that a loop of intestine had been nipped behind the tumor, decided to reopen the abdomen.

An anæsthetic was administered and the wound was quickly reopened. There was a considerable quantity of blood-stained fluid in the peritoneal cavity, but it was quite odorless. There was not a single intestinal adhesion or other evidence of peritonitis. The tumor was then raised up, and a loop of intestine was found behind it and was released. The incision was prolonged, and the tumor and uterus were removed, but just as the pedicle was being secured and fastened the patient became collapsed, and before the abdominal incision could be closed she ceased to breathe.

Remarks.—The operation was in

every way satisfactory, and there seemed every prospect of the patient making a good recovery and obtaining the desired relief. It soon became evident, however, that something was wrong, and on the evening of the fifth day the symptoms became alarming, and clearly pointed to severe intestinal obstruction. The abdomen was reopened with a view to relieving the obstruction. A loop of intestine was found lying behind the tumor, in the pelvis. This was extricated, and to prevent a recurrence of the displacement hysterectomy was performed. The patient died before the operation could be completed. I much regret having attempted to do more than release the imprisoned loop of bowel. The patient's strength was too much reduced to bear the shock of a second severe operation.

CASE 16.—E. C., aged 45, single, was admitted into St. Thomas' Hospital on June 27, 1892. She began to menstruate at twelve, the intervals were twenty-five days, and the periods lasted four days; the loss was moderate, and there was not much pain. She was regular until about six years previously, when she had a fall, which caused her much pain in her abdomen. From that time the periods were painful and more profuse, and she became weaker and in bad health generally.

For the last three years the periods, though beginning at the regular time, had lasted as long as fourteen days, and the patient had lost flesh and become anæmic. Two years previously she had a sudden and severe flooding, and had to remain in

bed. During December, 1891, and January and February, 1892, her losses had been very profuse, and had continued without intermission for ten weeks. Since February, 1893, the periods had been regular again, but latterly the pain had been worse than ever. For several years the patient had severe pain during defæcation unless aperients were taken. There had been occasional difficulty in micturition, but the catheter had never been required. For eleven months she had been taking ergot regularly as an out-patient. On examination a mass of hard tumors could be felt occupying the hypogastric, part of the umbilical, and both iliac regions. One mass on the right was more movable than the rest, as though less sensible than the others. Vaginal examination proved the vagina to be very short, the lateral fornices, especially the left, being depressed by a hard mass extending out from the cervix on all sides. The uterus was fixed. On the right side there was a separate mass passing backwards, and on the same side, at a higher level, a much more movable tumor could be felt, attached to the main mass by a pedicle. This mass seemed to fill up the pelvic inlet. There was distinct pressure on the lower part of the rectum. The upper limit of the tumor was five inches above the symphysis pubis.

On July 7 abdominal section was performed. Both ovaries and both tubes were removed. The uterus was found to be rotated on its long axis, so that the attachment of the left broad ligament lay almost directly below the incision. The left

appendages were removed first without difficulty. The right ovary and tube were lying behind, between the tumor and the pelvic floor. To get at them the uterus had to be turned round by inserting the hand underneath it and pulling the lower side up into view with considerable difficulty. The right appendages were secured by large pressure forceps; the broad ligament was transfixed, tied by the Staffordshire knot, and divided. There were large myomata growing outwards from all sides of the uterus, forming a number of smooth, hard, irregular-shaped sessile tumors. The uterus appeared to have exactly adapted itself in its growth to the shape of the pelvic cavity and brim. After the uterus had been rolled back into its original position the hand was passed into the pelvis, and a number of coils of intestine that had fallen into the pelvis were rescued from behind the tumor. There was very little bleeding, and the abdomen was closed without recourse to douche or drainage. She made a good recovery, and was discharged September 2, 1892.

March, 1894.—Menstruation is said to occur every two months. She suffers from occasional pain, but her general health is very good. She is not anæmic.

June 29, 1894.—Last menstruation May 24; loss slight. During previous year menstruated every two months. Has had two severe hæmorrhages since operation, the last in July, 1893. Is feeling better than she has done for seven or eight years, and the tumors are much smaller.

Remarks.—There is little in this case to call for comment. The operation has resulted in a marked diminution in size of the tumors, and a decided improvement in general health.

CASE 17.—C. G., aged 39, single, was admitted into St. Thomas' Hospital April 24, 1893.

She began to menstruate at sixteen. The periods recurred every twenty-eight days, and lasted seven days; they were profuse, but unaccompanied by pain except headache. Latterly the periods had lasted longer and were more profuse. No clots were passed, but the discharge came in gushes occasionally. It was pale in color. A swelling in the abdomen had been discovered accidentally about a year previously. Her general health had suffered, she had lost her appetite, slept badly, and was losing flesh. For five months she had been unfit for work, and for two months had been resting and taking ergot, but without benefit. On examination a centrally situated movable tumor was found, rising out of the pelvis to the line of the umbilicus. The cervix was high up and far back in the vagina. The sound passed four inches behind the main mass of the tumor. The patient was very anæmic. Operation was advised.

On April 27 abdominal section was performed. Both ovaries and both tubes were removed. Behind the uterus and lying in Douglas' pouch a mass of proliferating growth was felt. On bringing this up into view it was found to be a papilloma the size of a Tangerine orange ($3\frac{1}{2}$ inches

by $2\frac{1}{2}$ by $1\frac{1}{2}$), growing from the hilum of the right ovary. This was removed with the right appendages. The left appendages were normal. The removal of the myoma itself would have been very difficult. No douche or drainage was used. The muscular and aponeurotic layers were sutured separately with five fine silk sutures.

On May 4 the stitches were removed, as the wound looked rather red, and the next day an incision was made into the lower part of the wound, which afterwards began to suppurate freely, and about a fortnight later two of the deep sutures came away. Except for this recovery was uninterrupted. On June 13 the patient left the hospital. Examination on that day showed the tumor to be considerably smaller. The uterus was anteverted and adherent to the anterior abdominal wall. This adhesion was possibly due to a slight wound accidentally inflicted on the anterior peritoneal covering of the uterus during the operation.

March 15, 1894.—The uterine tumor was quite movable, measuring four inches in breadth, rising four inches above the symphysis pubis, and causing no projection of the abdominal wall. There was nothing abnormal in Douglas' pouch or on either side of it. Menstruation had occurred twice, viz., in November and December, 1893, but not since. She had no abdominal pain; was in good health. She seldom suffers from headache, is in work, and feels fit for it.

Remarks.—The symptoms due to the uterine tumor were much aggravated by the development of a small

papilloma in the right ovary, which was discovered for the first time during the operation. It is therefore difficult to say how much of the improvement in the patient's health should be attributed to the removal of the diseased ovary, and how much to the effect upon the uterine tumor of the removal of the uterine appendages. The combined result has been to restore the patient to her normal healthy condition, and to enable her to follow her employment without inconvenience.

CASE 18.—S. A. R., aged 40, married, was admitted into St. Thomas' Hospital, September 18, 1893. She had begun to menstruate at twelve, and was regular at intervals of twenty-eight days, until nineteen. For three years after that she was in a bad state of health, suffered from extreme anæmia, and did not menstruate at all. At the age of twenty-two menstruation again became regular, but for the first three days was attended by pain. She had married at the age of twenty-four, but had never been pregnant.

In February, 1892, she began to suffer from pain in the lower part of the stomach and down the legs; the dysmenorrhœa was most severe and the menstrual flow was diminished, and occasionally clots were passed. For the first week after each period she had a watery discharge, which was sometimes offensive. She had been losing flesh. For a few months before admission she had constant pain in the groins and down the backs of the thighs, and during her periods micturition was difficult and painful, especially upon rising in the morning.

On vaginal examination nothing abnormal could be discovered; on palpation the uterus was found to be enlarged, the fundus occupying the hollow of the sacrum, and the cervix arching over the posterior vaginal fornix. The large body of the uterus, which was smooth, firm and elastic, could not be moved from the true pelvis. The sound passed backward four inches. The examination aggravated the pain.

On September 28 abdominal section was performed. The abdominal wall was very thick from deposit of fat. The uterus was found to be uniformly enlarged by an interstitial myoma, and was incarcerated in the true pelvis. Both ovaries and both tubes were removed, but a portion of the left ovary was included in the ligature. Some difficulty was caused by the intestines getting behind the tumor into Douglas' pouch.

On September 29 she was losing blood freely; the period was due a week later, and she was suffering from severe intermittent pain. This condition continued for a day or two, but on October 5, when the wound was dressed and the stitches were removed, the discharge was much less and was scarcely blood-stained.

On October 20 she was examined. The tumor had decreased to an extraordinary degree, was freely movable, and could be almost lifted from the pelvis. She had no pain or discomfort.

On December 22, 1893, she was in excellent health; the tumor was smaller and softer, and she was free from discomfort.

On July 13, 1894, continued to

enjoy perfect health. There had been no hæmorrhage, menstrual or other, since leaving the hospital, nine months ago.

Remarks.— This case was one for which the operation was eminently suited, and the result has been in every respect satisfactory; menstruation only occurred once after the operation, and its arrest has so far been permanent, while the diminution in the size of the tumor has been rapid and remarkable.

CASE 19.— M. B., aged 37, was admitted into St. Thomas' Hospital, March 5, 1894. She began to menstruate at twelve, and the periods, lasting three or four days, had occurred regularly at intervals of three weeks. Her illness dated from an attack of lumbago seven years before admission; since that time she had suffered greatly from paroxysmal pain, which began a few days before and lasted for a few days after every period, so that she was free from pain only one week in three. On some occasions the pain had been so severe that she had been obliged to go to bed. During the seven years the flow had become gradually more profuse, and had lasted for six days. She thought the pain was proportional to the amount of discharge. During some of the attacks of pain micturition had been difficult, but the catheter had never been required. The day before the flow commenced the patient suffered from retching, and occasionally from vomiting. She had been very constipated. There had been no intermenstrual discharge.

On admission the abdomen was

found, on deep palpation, to be rather full, and a firm central tumor could be felt extending from the symphysis upwards for four and a half inches, and laterally two inches on each side of the middle line. There was dullness over the lower part of the tumor. On vaginal examination the cervix was found low down, and hanging from the external os was a small mucous polypus. The mass felt on abdominal palpation was found to be incorporated with the body of the uterus. The sound could not be passed even when the cervix was drawn down by the vulsellæ, so that it could not be ascertained whether the uterus was behind or in front of the mass. *Per rectum* the tumor could be felt bulging into the bowel, but the finger could be easily passed beyond it. On March 16, abdominal section was performed. The left ovary and tube, which were slightly adherent, lay in front. They were separated and removed; the incision had to be made through ovarian tissue, owing to the shortness of the pedicle. The right ovary lay at the bottom of Douglas' pouch. It was as large as a hen's egg, and slightly adherent. The right appendages were separated and removed. During the manipulations the cyst, in the ovary ruptured, and some altered blood, brown and pultaceous, escaped. The peritoneal cavity was sponged out, and some dark bloodclot which, though recent, was evidently prior to operation, was removed. The source of this clot was not ascertained; it was thought to be from a saccule in the ovarian cyst, or from a second cyst. The

uterus was uniformly enlarged by a fibro-myomatous growth, and the fundus reached to within two inches of the umbilicus. The wound was closed with silkworm gut, eight cat-gut sutures being passed through the aponeurosis. The enlarged (right) ovary was found to be a multilocular cyst containing altered blood of various hues and consistence. She made a good recovery. During the first week after the operation there was slight metrostaxis.

On April 3 she was examined and the mass was found to be smaller and more movable. The uterus appeared to be adherent to the under surface of the abdominal wall in the neighborhood of the incision. *Per rectum* the tumor could still be felt projecting slightly into the bowel. She was discharged on April 17 in a satisfactory condition.

On July 22 she was seen. She had not menstruated since leaving the hospital. She complained of flushings, but of no other morbid symptom. She was looking very well and much stronger, and was at work.

CASE 20.—A. H., aged 41, married, was admitted into St. Thomas' Hospital May 7, 1894. She began to menstruate at fourteen and a half years. She was always regular. She was married when twenty-nine, and had one child in January, 1883. She had no miscarriages. After the birth of her child she menstruated regularly until December, 1893. Two years ago she had some difficulty in micturition. This difficulty recurred in August, 1893, when the catheter was required

three times in the course of a week. On examination a tumor was discovered and diagnosed as a fibroid. Since this was first noticed it had grown rapidly. For the five months previous to admission she had had great pain down the right leg from the loin for two or three days preceding each period, and had occasionally been obliged to go to bed. The periods had been excessive in amount, though not in length.

On examination of the abdomen a tumor distending the right side was found, rising two inches above the umbilicus, and having a breadth of six inches. On the right side the tumor was soft, rounded, and solid. The left portion appeared to be the body of the uterus; this part was thought to contract when under observation. The flanks were resonant. *Per vaginam*: the vagina was found to be almost obliterated by a large, round, soft, solid swelling, parting the posterior wall downwards and forwards. The swelling dipped to within $1\frac{1}{4}$ inches of the fourchette. The os uteri was very difficult to reach, being lifted above the summit of the pubes and to the left side. The sound was with difficulty passed the normal distance. There was a slight trace of albumen in the urine.

On May 17 abdominal section was performed. Great care was required to avoid incising the tumor. The left tube was traced outwards into the left iliac fossa, where it was bound down by extensive adhesions; the left ovary could not be made out, as it was flattened out and atrophied. The abdominal incision was enlarged,

but no further sign of the ovary could be discovered. The left broad ligament was ligatured, and the mass made up of the tube and atrophied ovary was removed. It was subsequently found that the incision was through ovarian tissue. On the right side the tumor was soft, and it was at first thought to fluctuate. In order to reach the ovary the incision was again enlarged. The right appendages were then removed. The removal of the ovaries caused a certain amount of shock. The abdomen was then closed with twelve deep and six superficial sutures.

The right ovary measured 2 inches by $1\frac{1}{4}$ by $\frac{3}{4}$. Externally it was thick and fibrous, and contained a cyst the size of a walnut. The difference in the size of the two ovaries was very remarkable, the left being so shrivelled as to be scarcely recognizable, while the right was double the usual size.

The patient made an excellent recovery, and left the hospital June 13. Examinations made before that date showed that the tumor was already shrinking.

Remarks.—This and the preceding case have occurred too recently for any conclusions to be drawn as to the final result of the operation.

GENERAL SUMMARY.—Of the twenty patients, six were between the ages of thirty-one and thirty-five inclusive, nine were between the ages of thirty-six and forty inclusive, five were between the ages of forty-one and forty-six inclusive. With regard to the number of children, sixteen were nulliparæ, three were primiparæ, and one had borne five children.

The tumor in nine cases was single, interstitial and abdominal, and in three single, interstitial, and pelvic. In eight cases the tumors were multiple, consisting both of interstitial and subperitoneal growths. In six of these eight cases the tumors were partly situated in the abdomen and partly in the pelvis; in one case they were situated wholly in the abdomen, and in one wholly in the pelvis. In three of the eight cases of multiple myomata a pedunculated subperitoneal myoma was removed at the same time as the uterine appendages. Two deaths occurred in consequence of the operation. In one instance the cause of death was intestinal obstruction; in the other there was no post-mortem examination, but the cause of death was probably the same. This proportion of deaths (10 per cent.) is above the average, and is not to be taken as the true mortality of the operation.

Deducting the two fatal cases, together with two cases that have not been heard of since the patients left the hospital, and two others that have only been operated upon during the current year, there remain fourteen cases available for studying the ultimate effects of the operation. In eight of these fourteen cases the patients have been seen, or reports of their condition have been received after a period of three or more years since the operation. In two cases the information extends to two years and in the remaining four cases it extends to periods varying from nine months to a year. Speaking generally, the results of the operation may be described in eleven of the cases

(78½ per cent.) as very satisfactory, in two cases (14½ per cent.) as fairly satisfactory, and in one case (7 per cent.) as unsatisfactory.

Taking the results in detail, it will be observed that in twelve of the fourteen cases there was marked diminution in the size of the tumor or tumors. In one case there was immediate diminution, followed first by a regaining of the former size, and later by a gradual return of the diminution, which has this time proved permanent. In only one case has there been little or any alteration in the size of the tumor.

In no case in which pressure symptoms existed before operation did the operation fail to relieve them.

Menstruation finally ceased at once or within the first few months in five cases, after the lapse of a year in one case, after two years in two cases, after two and a half years in two cases, and after three years in one case. In two cases menstruation has continued, and in three cases the result in this respect is not known.

There was slight metrostaxis for the first few days in three cases, for the first few weeks in one case, for the first few months in three cases, and for two years in one case.

Menorrhagia, which was present before operation in eighteen out of the twenty cases, has persisted in one case; in one case it continued for six months, and in two cases it recurred occasionally at considerable intervals. In those of the other patients who survived the operation, and whose subsequent history is known, there was no return of the menorrhagia after the operation.

Finally, the general health, which in every case was more or less seriously affected at the time of the operation, has been completely re-established in eleven cases, has been partially reestablished in two cases, and remains practically unimproved in one case.

The conclusions at which I have arrived from my own limited experience of the operation are —

1. That it affords an almost certain means of relieving all the more dangerous symptoms in cases in which active treatment is necessary, and in which removal of the tumor or tumors is either impracticable or likely to be attended with special difficulty or grave risk.

2. That it is unsuitable in cases where the tumors have attained a very large size, or have become œdematous, or have undergone cystic or other degenerative change.

3. That it is peculiarly applicable to those cases in which the tumors are for the most part intra-pelvic, and in which operative interference is required for the relief or prevention of dangerous pressure symptoms.

4. That its field of usefulness is likely to become curtailed in proportion as the technique of abdominal hysterectomy improves and the mortality of the latter operation diminishes.

5. That although, in experienced hands, its mortality is not high, it should never be regarded or spoken of as a slight or minor operation.

6. That it is impossible to know beforehand whether it will be an easy or a difficult, or even a practicable operation.

7. That the relief is not generally so prompt or convalescence so free from interruption as in an ordinary case of ovariectomy, or even of abdominal hysterectomy.

8. That before being submitted to the operation a patient should, in the interests both of herself and the operator, be made fully aware of the uncertainties that specially attend it.

SOCIETY PROCEEDINGS.

Massachusetts Medical Society, Suffolk District—The Section for Obstetrics and Diseases of Women.

J. M. JACKSON, M. D., SECRETARY.

REGULAR meeting, Wednesday, January 23, 1895, Dr. G. H. WASHBURN in the chair.

VAGINAL HYSTERECTOMY AFTER MARTIN'S METHOD. BY DR. H. A. LOTHROP.

Discussion.

(Continued from page 396).

Dr. MARCY.—If for no other reason I should be delighted in being placed on record as expressing my appreciation of the paper I have listened to. For twenty years, more or less, the problem of pelvic surgery has been one of great interest to me. I have often talked in this room about it when it was not a fashionable subject. Pelvic surgery has grown more and more of general interest to the general surgeon, as well as to a few of us who may be called specialists. The principal dangers, as the writer and Dr. Cushing have clearly pointed out, are sepsis and hæmorrhage. The dangers of sepsis need not be repeated to this audience. We all understand them, and yet the large percentage of deaths are incident to it. The dangers from hæmor-

rhage Dr. Cushing has pointed out. This blind surgery,—and here is a difficulty that confronts the experienced operator in attempting to remove growths of any sort through the vagina. A great deal of the work under the most careful technique is not guided altogether and clearly by the eye, and hence it is we hail with delight the possibilities that come from the Trendelenberg position, where the pelvis is subject to the easy and careful manipulation of ocular inspection. At the last meeting at which I was present some of us discussed the dangers that arose from that position, and that in passing should be referred to, because I am quite sure I have lost two lives referable to no other thing than this position, and these in young women with sound arteries. I find my New York friends have had cases they could not explain the cause of death, and think it is possibly due to the position.

As to the so-called Martin operation: I remember very well Dr. Martin's visit to this country in 1887. Then three cases were arranged as a sort of field-day for the men here, and quite a number of distinguished men from New York had the oppor-

tunity of seeing Dr. Martin operate in America. He operated under disadvantageous circumstances, being away from home with strange assistants and a strange audience. That I am sure was in a measure a difficulty he felt. At all events Dr. Burt will remember coming for me at midnight to see one patient. She died from hæmorrhage and hæmorrhage of the ovarian artery; but it was not from lack of strength in the application of the ligatures. After this experience I felt a little hesitancy in attempting vaginal hysterectomy. I selected my cases with great care, and soon found that the sutures through the vaginal juncture of the uterus were unnecessary, and I have ceased to use them for a number of years. Having dissected freely away, the hæmorrhage is not worth thinking about as a rule at the junction of the vagina; if so, it is easily controlled by artery forceps. At the last meeting I showed a case I removed by the vagina and was obliged to remove it by the abdominal route in order to complete satisfactorily the operation. The ovarian artery on one side had escaped and was bleeding, and I fortunately knew it in season. But that is not ideal surgery, and those are the difficult things that are likely to beset us in the very next operation that comes to any of us. The unexpected is that which is very likely to happen, and, if it happens to the veterans, why may it not happen to those less experienced? I regard the removal of the uterus by the vagina one of the most difficult operations in surgery; it may be one of the easiest.

As to drainage: If the tissues are necrotic and you use drainage you get what Dr. Cushing has referred to as bad smell. He knows that it means a good deal more, that it is an infected portion of structure and has

got to be eliminated by the slow process of exudation, proliferation, little by little; and I think it is as early as 1890 I reported here a way in which I thought it could in the selected cases be pretty easily controlled by using the long needle with a handle and the eye near the point. It is a needle by which you may carry your sutures deeply and accurately, and when you have put in the last line of sutures you have included everything.

These, however, are the cases that are more fortunate, and when you have these you can congratulate yourself that you have a safe operation and a safe exit from it. Suppose we have a case complicated by pus tubes. I am the last man in this room to be willing to approach pus tubes by the vagina. There you have a doubly blind way of getting at adherent parts, as has been referred to. The tubes are always adherent, and you must lacerate tissues before you can remove them; and when you have such lacerated tissues, such open wounds, and bathe them with pus, what could be more disastrous, even if you have drainage through the vagina? If you drain, drain thoroughly and understandingly, but do away with the gauze drain if you are sure you have your structures aseptic, and you may be sure of it here as in any of the other operations, provided you know the limitations of your disease; and when you have done that it is not the twentieth case that dies: it is the twentieth as well as the nineteen preceding it that gets well, because it is not infected.

Dr. BURRAGE.—I was unfortunate in not hearing Dr. Garceau's paper, but had the opportunity to see him do emorcellation on the cadaver. I have been very much interested and instructed by Dr. Lothrop's paper and by the remarks of Dr. Cushing

and Dr. Marcy. There is a reaction in favor of the vaginal route. Polk has come out within a month saying that all fibroids up to the size of four months' pregnancy should be removed by the vagina. Statistics are in favor of the vaginal route, and I am glad that Dr. Garceau and Dr. Lothrop have read these papers, as bringing attention to the point. Contrasting the two methods, it seems to me that the vaginal route has a great deal to be said in its favor: less shock in that way. The conditions of the way of diagnosis are not as good, but it does not destroy the integrity of the abdominal wall; no subsequent danger of hernia. As regards the other method, of course it requires greater skill, but after we have had more experience in attacking it from below we ought to get very good results. As regards pus tubes, I rather approach them from above, but still I am willing to believe that the Frenchmen get very good results approaching them from below. As regards the technique, the ground has been carefully covered, and I should agree from experience with what Dr. Cushing has said. I do not care for clamps particularly. I think they are painful and rather unsurgical, and should prefer ligatures where they can be applied.

Dr. GARCEAU. — The principal objection to this operation of vaginal hysterectomy by the French method is, as Dr. Cushing points out, its extreme difficulty. It is one of the most difficult operations in surgery, but because an operation is difficult is not enough to condemn it, it seems to me. The statistics in France of eminent operators have shown that the operation of vaginal hysterectomy, particularly for purulent collections, has been most favorable. The results have been far better, other things being equal, than the results by

cœliotomy. The statistics of one operator are very favorable, — 375 cases with a mortality of 5 per cent. That included everything, fibroids, pus tubes and simple cases. Perhaps the most instructive cases are those of Landeau. He prefers cœliotomy. He has done thirty cases and had thirty recoveries — these cases invariably by the abdominal route — cases of inflammation of the uterus, both appendages, in which there were dense adhesions filling the pelvis and in which cœliotomy under such circumstances would have been exceedingly dangerous, and yet he had thirty cases without a death. This, it seems to me, is very instructive and is a result which makes one think.

The great difficulty in introducing a new operation is this, as Segond says the operation is unique. One must see it done by a skilled operator in order to appreciate and apply it himself afterwards. A verbal description is not very good. A written description is not much better. I have been to Paris and seen these men operate, and I am firmly convinced it is one of the greatest things in surgery today. It will meet with great resistance in America on account of its extreme difficulty. Dr. Cushing has done it three times and is not satisfied with it. Dr. Cushing is a skilled man. He met with difficulties during his performance, and they were such as to lead him to condemn it temporarily; I hope not permanently. In cases of severe inflammation, where the operation of cœliotomy is dangerous, I believe that in the future it will be the only thing done. In cases of fibroids reaching to the umbilicus, I think it will be the only operation of the future. Opening the abdomen is a very serious matter, as everybody knows. Another thing is this: in cases of cœliotomy, when you remove the tubes, you leave the uterus

behind. Dr. Cushing has told me that most of his cases, if not all, do well. I do not think it is the experience of most operators. Only lately in the Woman's Hospital there have come under my notice two cases of women operated on within two years. No better; if anything, worse. They are miserable and wretched and want to be cured, and yet in both instances ovaries and tubes were removed by a skilled operator. This speaks for itself. Dr. Kelley wrote to me a little while ago that he was removing the tubes and uterus both by laparotomy in cases of inflammation. This seems to show that the uterus has not received as much attention as it ought to, and Dr. Kelley's experience is not unique. If it can be found that the uterus can be attacked from below with as great success as from above, I think, without question, it will be preferred in the future, if there is less shock, as has been shown over and over again. There is no more shock, or not much more, in doing vaginal hysterectomy than a severe perineal operation. That it is a blind operation I am not willing to admit. It is not brutal and it is not unsurgical. That it can be done I am sure, because I have seen it done. It seems to me the sole objection is one of technique. I believe that in the future the operation will become general. There is no question that it is a good thing and that it is so considered in France. In the first place it met with great resistance. The same objections made in America were made in France. That it has held its ground and gained in France is very remarkable.

In regard to the use of clamps I can only say that in this operation the clamps are absolutely necessary. You cannot put ligatures on a broad ligament which is surrounded by masses of inflammation, surrounded

by purulent collections. They are a necessary evil. That it does cause pain there is no question. It is an intense, constant drag, something which irritates all the time until the cause is removed, but in these cases it cannot be avoided.

The way to do the operation is but one. There are certain fixed rules and you must follow them closely or you are lost.

In conclusion, I will say that I am firmly convinced that it is an operation which has its place in surgery and will in the future undoubtedly find its foothold.

Dr. MARCY. — I do not think it would be quite fair not to use the name of our friend Battey in this relation, a name that is historic, a name most of you have learned to appreciate, because he was a pioneer, a very fine surgeon, and we still look upon him with love and veneration. Whatever may belong to our French friends in reference to doing a great many things through the vagina, our friend Battey's name comes up as one of the pioneers.

So far as the danger from simple exploratory laparotomy is concerned, I am quite sure that the last speaker over-estimates it. It is not long since I had occasion to look over my records with care. I have now made about thirty exploratory laparotomies, and every one of these made an easy recovery; therefore, if our French friends ask us to adopt certain rules we may be pardoned if we appeal to certain facts.

Dr. KANAN. — Shortly after Dr. Garceau's paper, I had a patient that seemed to be a suitable case to operate upon. I simply want to speak of the difficulty of the operation. It is exceedingly difficult, and if it is adopted it is simply going to be by experience. I do not mention the case in detail, as I intend to report it later.

Dr. BURRAGE read a paper on

FREUND'S OPERATION.

(see page 372.)

Discussion.

Dr. CUMSTON.—There is only one thing that I would suggest in this operation, like any other plastic operations in the vagina. Dr. Burrage I think, speaks of having had stitch-hole abscess. I would plead in favor of the use of silk in all plastic operations on the vagina, no matter what nature. During the four years I was assistant in Geneva, I was in Vulliet's service, and there we used silk simply soaked in an alcoholic solution of iodol about 10 grammes in 32 grammes. From there I passed into Kummer's service, where we did a great many plastic operations. We always used silk soaked in corrosive sublimate 1 to 1000. I do not recollect having seen one stitch show signs of pus.

Dr. GOLDTHWAIT showed a speculum, which was a self-retaining perineal retractor.

PATHOLOGICAL SPECIMENS.

Dr. E. W. CUSHING.—I recently went to New Hampshire to remove what was supposed to be an ovarian tumor. The patient was a young girl of 20 years. The tumor had been noticed some eight months, but had only given annoyance by its size and weight; within the last two months was said to be increasing rapidly. Owing to the great nervousness of the patient I did not have an opportunity of examining her until she was etherized for the operation, when I found that the tumor was high up in the abdomen, rather fixed, or at least limited in its mobility, and more on the right side than in the

middle. I pronounced it a cyst of the kidney. On opening the abdomen, it was at once seen the growth was retroperitoneal, and about the size of a large cocoanut. Over it ran what seemed to be an artery, which entered the tumor on its summit.

On dividing the peritoneum the enucleation of the growth was not particularly difficult. The supposed vessel was ligated and cut, a clamp being left on the end next the tumor. It was found to be the ureter, the kidney having turned completely over in its distorted growth. The renal vessels were ligated with catgut. Inasmuch as the thin cyst had ruptured and emptied some of its contents into the abdominal cavity, the abdomen was flushed and drained with a glass tube. Fourteen ounces of bloody serum were drawn from the tube within the next twelve hours. Recovery uneventful. On examining the specimen it was found that in some unknown manner, and without any definite symptoms, the ureter had become obstructed near the pelvis of the kidney, or else there was some congenital formation. The whole organ was dilated so that each calyx was as large as a wine glass. The walls were very thin, the contents limpid and without smell. There was no stone in the ureter, the lumen was simply occluded and the whole ureter below the obstruction was shrunk. I show you this specimen as a curiosity.

The next specimen which I show is a pair of pus tubes, and the point about them to which I would call attention is the great thickness of the part of each tube where it joins the broad ligament, where the ligature had to be applied. I wish to show Dr. Garceau how impossible it would have been to satisfactorily remove such tubes through the vagina, and how unsurgical it seems to me that

it would be to leave such diseased masses in the abdomen after removing the uterus by vaginal hysterectomy.

The next specimen is a myomatous uterus, removed by abdominal total hysterectomy. The whole growth was subperitoneal, and I presume that it could have been removed from below by morcellation. I should be inclined to try the latter method in another similar case, although nothing could have been more comfortable and satisfactory than the convalescence of this patient. The circumstances which attend the growth of this tumor were rather peculiar. The patient was a young married woman who in her first pregnancy was suddenly seized with a tremendous hæmorrhage, so that she was found lying unconscious in a pool of blood.

She was resuscitated with difficulty, and the dead fœtus was removed with much trouble. The position of the tumor low in the pelvis, with the probability of further growth and the constant menace of such another accident in case of pregnancy, seemed to warrant and require operation.

OTHER SPECIMENS.

4. A stricture of the rectum,

extending upward some two inches, and probably malignant. It was extirpated by dissecting out the rectum up to the insertion of the peritoneum. Union by first intention.

5. A uterus removed for hopeless retroversion, and because the woman was made a miserable sufferer by pressure on the bladder by the displaced cervix. She had sought relief from many physicians, and had been refused operation in one of the great hospitals in New York, on the ground that the adhesions were too dense to sever, and that the pelvis of the kidney was dilated from pressure on the ureter. By vaginal hysterectomy the operation was easy and the recovery uneventful, while the restoration of the patient to full health and comfort was extremely gratifying.

6. A cauliflower growth from the cervix uteri.

7. The uterus and appendages from the fatal case mentioned by Dr. Garceau and myself in the discussion of his paper. Interesting, as showing the adhesions of the intestine to the posterior surface of the uterus, and the certainty that the bowel would have been injured if I had tried to complete the removal of the uterus from below. *Ex uno disce omnes.*

The Philadelphia Obstetrical Society.

Meeting held March 7, 1895, Dr. WM. H. PARISH, president, in chair.
 Dr. THEOPHILUS PARVIN read a paper entitled

"A CONTRIBUTION TO DEMOGRAPHY."

This paper was based upon a study of the number of births in Philadelphia during certain periods,

the relative proportion of males or females, and the number of infants dying in the first year; also the mortality from eclampsia and from puerperal infection since the introduction of the antiseptic period, as contrasted with preceding years, and finally a brief consideration of the deaths from old age. The figures and facts

were taken from the statistics published by the City Board of Health, two periods of five years each being chosen for comparison, one being from 1868-1872, which might be taken to represent the pre-antiseptic period, and the second from 1888-1892, when antiseptic practice had become established. There were 231,000 births during the ten years reviewed, of which 2,654 were plural. Tables were prepared showing the months during which the greatest number of births occurred; these were December, August, July and October; the least occurred in April, May, June and February. The months in which conception occurred most frequently were March, November, October and January, and the least frequently were July, August, September and May. This was compared with Mantegazza's studies of the births of illustrious men and found to very nearly coincide.

The relation between male and female births did not correspond with the results of Bertillon's investigations of births in Europe, nor to the usual rate, which is 100 female to 106 male births. In Philadelphia, there appears to have been an extraordinary number of boys born, the first years giving a proportion of 108, 109, 113, 111, 110 male to 100 females; while the second period of five years was 110, 108, 109, 109, 106, making an average for the two periods of 110 and 109 respectively. With regard to the natality of the city, the statistics appear to bear out the statement that it is below normal.

A comparison of the mortality during the first year in the two selected periods shows, that while the death-rate has lessened, the diminution has not been as great as might have been anticipated (26.7 per cent. in the first period, 22.5 per cent. in the second).

The number of cases of puerperal eclampsia shows such wide

variations in different years, which are as yet unexplained and proved, that there is some factor concerned in the etiology not only undiscovered but unsuggested (first period, mortality .15 per cent., second, .07 per. cent.). The mortality, however, of the last period shows either that the disease is less frequent, or that the cases are better cared for. Puerperal fever also shows a decrease (.13 to .08 per cent.). As pointed out by Shrader, of Hamburg, antiseptic obstetrics may be unsuccessful owing to over-treatment, but the prophylaxis of infection has, beyond question, greatly lessened the disease. With regard to death from old age, there is not much difference, but, such as it is, it is against the recent period, and, so far as it proves anything, indicates an earlier decrease of vital power.

Discussion.

Dr. M. PRICE.—I rise to thank Dr. Parvin for his interesting paper and for his study of vital statistics, his conclusions pointing in the direction which must eventually benefit us all. He referred to the question of the use of antiseptics in obstetric cases. Now, while I am forced to use, in some cases, chemical antiseptics, I am convinced that the indiscriminate use of them has done much harm. Antiseptics should be used previous to birth, in suspicious cases, where there is a suspicion that the mother is diseased, for the sake of the child, to prevent blindness. By the use of antiseptics in the birth canal I think that blindness can be wiped out. But I have seen many cases where there have been bad results from the meddlesome washing with strong antiseptic solutions. I have seen a number of cases of mercurial poisoning resulting. While I do not believe that a single bichloride injection of one to two thousand will do

any harm, I am convinced that repetition will do great harm. If the uterus is not cleaned out thoroughly with one washing, any further persistence in that direction is at the peril of the mother. I think that where a man finds it necessary to give repeated injections, it is because the work is imperfectly done. It is bad obstetrics. I believe that where there is a bad odor and evidence of putrefaction, it is our duty to thoroughly clean the uterus, and, if we thoroughly clean the part, we can keep it clean by hot water. By repeating the antiseptic injections we only do harm. This is based upon seventy-five or eighty cases of septic poisoning, occurring in the last eighteen months. The antiseptic craze has gone too far and this explains the slight advantage observed by the reader of the paper.

Dr. W. S. STEWART.—Our thanks are due to Dr. Parvin for preparing a paper of this kind and for going to the trouble of getting up these statistics. Of course, it is very difficult to discuss a paper of this kind, because it is principally made up of statistics, but the remarks made by Dr. Price I can fully substantiate as to the use of douches before labor. I believe that the patients should be thoroughly cleansed before labor; but, after labor, where there is no offensive discharge and no indication of sepsis, the less we interfere with the douche the better. I have known of a case where the douche was left to the nurse, and apparently the solution passed through the fallopian tubes, for immediately after the injection the patient complained of pain in the ovarian region and I attributed her slow getting up to the effects of the douche. I think with the last speaker that too much meddling is bad. The only reason why there is less eclampsia is because it is generally known that chloral is one of the best remedies to arrest the convul-

sions and prevent the series of results that occur where it is not used. I think that this would account for the less number of cases reported of late years; I think, also, that obstetricians are more apprehensive in primipara of convulsions, and are careful in examining the urine and in treating the patient beforehand, so as to prevent the effects of albuminuria and the danger of uræmia from the retention of excretory material in the system.

Dr. A. B. HIRSH.—This paper covers so general a subject that it is almost impossible to discuss it in the limited time usually assigned to one paper. It seems as if we should devote the whole evening to the discussion when Dr. Parvin takes the trouble to get up a statistical paper like this, and the paper he has read is worthy of this courtesy. I offer it as a suggestion that this subject be taken up again and the whole evening given to its consideration.

A communication on

"THE ACCOUCHEMENT FORCE."

was discussed in a paper by G. M. Boyd, Physician to the Philadelphia Lying-in Charity. Clean obstetrics has benefitted patients by causing physicians to study cases more closely and thus to detect an existing albuminuria or a pelvic deformity, in time to adopt appropriate measures for saving mother and child from injury; and secondly, antiseptics has robbed surgical procedures of their former great danger. The following notes of cases were submitted in illustration.

CASE 1.—Primipara, eight and a half months, eclamptic for seven hours, seen in consultation. Marked uramic symptoms and foetal heart inaudible. Patient apparently not in labor. Patient was placed in dorsal position upon a table, and manual dilation, after the method of Dr. Philander H. Harris (*American Jour-*

nal Obstetrics, January, 1894), was carried out. In twenty minutes, the forceps could be applied to the presenting head, which was brought down into the pelvis, and patient at the expiration of an hour was delivered. Hæmorrhage at first profuse, ceased on extraction of placenta. Patient semi-comatose for one day, when symptoms disappeared and she went on to nice recovery. Ergot was not used.

CASE 2.—Primipara, eight and a half months, suddenly became eclamptic, after a dozen or more convulsions; was found unconscious when first seen in consultation. Urine highly albuminous. Nature, as in preceding case, had not initiated labor. Dilatation practiced as before, and cervix was incised in three places. The bleeding was not great from these incisions. Manual dilatation was continued. In thirty-five minutes the forceps were applied and head brought down into the pelvis, and in an hour the patient was delivered of a still-born infant. The uremic symptoms disappeared and the patient had no interruption to recovery, other than the introduction of the catheter.

CASE 3.—Primipara, a colored woman, 30 years of age, unmarried. One hour previous to admission was seized with profuse hæmorrhage. Placenta found partially over the os; labor had begun, head presenting. A tampon was introduced by the resident. Three hours later, on arrival, Dr. Boyd removed tampon, rapidly dilated cervix and ruptured membranes in fifteen minutes. Podalic version; perineum was torn by rapid delivery. "Upon examining the placenta and cord, a true knot was found, the death of the fœtus possibly being due to traction on this knot during version." Recovery uneventful.

Comments.

In eclampsia and placenta previa,

there can be no question of the propriety of using forcible yet scientific means to rapidly check the convulsions or hæmorrhage. The manual method is the best, and the plan of Dr. Harris should be followed of placing patient upon her back; she should be fully anæsthetized. Incision of the cervix is not recommended, except for extreme cases. In eclampsia, even in mildest cases, the importance of rapid manual dilatation is insisted upon, and it is more reliable for inducing premature labor than antiseptic bougies or Bainn's dilators.

Discussion.

Dr. P. S. HARRIS. — With regard to the three cases which the doctor has reported, it is clear that they were desperate cases, cases which we all recognize as those in which we must act, and act quickly, as far as eclampsia is concerned. I believe that we all appreciate the fact, where the patient has been comatose for a while, that it is clearly our duty — at least, most of us are inclined to acknowledge that it is clearly our duty — to induce labor. I believe that we are all imbued with the impression that the chances for that mother are better if she is delivered quickly; the sooner that woman is delivered the better for her interest, and I believe also for the interest of the child. The statement is made by some authorities that of all women who have convulsions and are comatose forty per cent. die, if undelivered, and that a much smaller percentage is lost where efficient methods are adopted to produce delivery.

As regards placenta previa, I think that we are coming to a point where we are convinced that placenta previa — quite as much as eclampsia — is a very dangerous condition, and one in which it is desirable to get the uterus emptied. Two weeks ago this afternoon, a friend of mine, of

Passaic, N. J., sent for me to see a case of placenta previa. When I got there I found violent hæmorrhages had occurred, but as she was not bleeding at that time, and I had an important engagement, I made an appointment to come the next morning. On my return I had the woman thoroughly cleansed; the vagina and rectum were washed out and, in short, all the technique of antiseptis, and then attempted dilatation of the os and delivery of the woman. The result was very satisfactory; the time was much shorter than usual

and the mother did well; mother and child are both living.

I have a collection of cases which I hurriedly prepared to present to-night. This table comprises my entire experience of placenta previa and eclampsia, in all cases in which there were no labor pains, or partial dilatation of the os uteri before I attempted to deliver. Of those I never lost one. There were also a few cases of placenta previa in which convulsions had occurred, which were not included in the number reported to-night.

No. of Cases.	Operated for	In presence of	What Labor.	Anæsthetic during Dilatation.	Time required to dilate cervix from index finger to expanded fist, in minutes.	Time required for completion of 2d and 3d stages, in minutes.	Total in minutes.	Mother.	Child.	Month of Utero-Gestation.
1	Placenta Previa.	Dr. Amiraux.	First.	Ether.	21	28	49	Living.	Dead.	8th
2	Placenta Previa.	Dr. J. W. Smith.	Fourth.	Ether.	20	25	45	Living.	Dead.	7th
3	Placenta Previa.	Drs. Smith and Millsbaugh.	Fifth.	Ether.	16	24	40	Living.	Dead.	7½
4	Placenta Previa.	Dr. Doty.	Fourth.	Ether.	22	22	44	Living.	Living.	8½
5	Placenta Previa.	Dr. C. Maginnis.	Third.	Ether. (?)	22	23	55	Living.	Dead.	8th
6	Placenta Previa.	Dr. C. Van Riper.	Multipara.	Ether.	16	19	34	Living.	Living.	8½
7	Eclampsia and Comatose, 10 hours before operation.	Dr. West.	Multipara.	Ether.	22	27	49	Living.	Living.	8½
8	Eclampsia and Comatose, 5 hours before operation.	Dr. Williams.	First.	Ether. (?)	55	20	75	Living.	Dead.	7th
9	Eclampsia and Comatose, 16 hours before operation.	Dr. Merrill.	First.	Ether. (?)	18	37	55	Dead.	Dead.	7½
10	Eclampsia and Comatose, 6 hours before operation.	Dr. B. F. Rogers.	Fifth.	Ether.	18	27	45	Living.	Living.	7th

By the addition of the number of minutes required for complete dilatation of the os to the size of the closed fist, we find that it was 230 minutes, or an average for the ten cases of 23 minutes. The average time required for completion of the labor in the eclampsia cases was 27.75, and in the placenta previa cases 23.5, making an average of 25.2 minutes for the second and third stages, thus making a total average of 24.5 minutes of all the cases in this report for elective delivery. Now, if we except from this report Number 8, in which I could not introduce my hand and delay was experienced, the time limit for dilatation is reduced to 19½ minutes.

Dr. Boyd has well understood the importance of strict surgical antiseptic technique in these cases, and it is a matter which, I think, we must all consider when we elect to do so important an operation as the one under consideration. It is true that placenta previa is a dangerous condition to both mother and child, and it is true that eclampsia is still a more dangerous condition; but that is no reason why we should add one fraction of danger to that condition. I confess that where it has been possible, I have removed patients from their houses to the hospital, where I could control the conditions. And though I have been put on record as discouraging the operation of symphyseotomy in houses where conditions are unfavorable, in the conditions under discussion this evening, I think it is better to operate in kitchens, with bare floor and table covered with oil-cloth, and to give patients the benefit of the operation, than to delay. The most strict aseptic surgical technique, however, is essential, and I should discourage any one from attempting these operations unless they are observed; but if time will not admit of doing all

we can, we should at least attempt to make the operations as safe as possible, with the means at our command.

Dr. M. PRICE. — In looking at the table, I am much surprised at Dr. Harris's child-mortality. He certainly has great success with the mothers, only one death out of ten; but six children out of ten—this seems a large mortality. I admit that all the cases of placenta previa that I have attended have been almost at term, and the problem of saving both mother and child was less difficult and the chances better than earlier. I have always had better results in placenta previa with free hæmorrhage, by forcible delivery, than in those with eclampsia. I am convinced that I can dilate and deliver in placenta previa with hæmorrhage much better without than with the aid of ether. I will mention a case in illustration:

It was a case of placenta previa, seen with Dr. Hollingshwad of New Jersey. He had spent two nights and a day with the patient; but she had had very little hæmorrhage and about two weeks before she had had a little show. The doctor met me at Pemberton station and we had to go about five miles back in the country. When he left the house she was perfectly comfortable, and when we reached there she was perfectly comfortable. She had had several pains and with each pain there was a gush of blood. Between the time he had examined her and I had my hands washed, the vagina filled with blood. I immediately went through the middle of the placenta and delivered a living child and the child is still living. The child was full and the dilatation easy. The blood flowed like a river past my arm, she lost two gallons in bed by actual measure after the delivery. Both mother and child are living.

I remember two cases occurring in the practice of a midwife. In the

first case, I called in Dr. Gioninger to help me; it was in a very poor neighborhood. I examined and found a central implantation and delivered a living child and she is still living. There were two or three cases in this midwife's practice beside this, and the children are all living. I must say that I do not dread placenta previa, if the mother is still living and has not lost too much blood before I see her. I believe that it is our duty to stand by the woman who has placenta previa, or else turn over the case to a competent man. The case in Pemberton, N. J., would have been dead in an hour if we had delayed, or if we had resorted to a tampon we would have lost her. My belief is that we should stand by and not leave the woman in that condition until delivered; but still the child may not live, owing to its weak condition from previous hæmorrhages.

Now as regards the eclamptic condition. Here there are more cases of death, because we have to use more violence; therefore, the results are bad. There is one case in which I am in doubt as to the best course to pursue. If we find a woman in the fifth month in this distressing condition, I do not think that it is our duty to bring on labor. It cannot be proved that the pregnancy is the cause of the convulsions. Here we should rely upon chloral and other drugs and not introduce an additional element of danger into the woman's condition. I have never seen any good in bringing on labor if the woman is not in labor. We should satisfy ourselves that the affection of the kidneys is secondary and the result of the pregnancy before we proceed to empty the uterus. After labor has begun, no one doubts the propriety of emptying the uterus.

Dr. LONGAKER.—My knowledge of this plan is not very extensive, but, by comparison with a long list of cases, I have come to the conclusion that

the method of accouchement force recommended by Dr. Boyd affords results which are not any better than those given ten years ago by Hofmeier and Homer, and the method was not original with them. It seems to me that if the child's life is not already lost by the hæmorrhage at the time of version, certainly the added risk of waiting is not great. The statistics show from 60 to 70 per cent. of cases of children lost; but the results are still as good as those reported by Dr. Harris. There is one point which gives me courage to hasten the delivery, and that is that there has not been any maternal mortality in these cases. I have had knowledge of one or two cases, in which the mother promptly died after extraction of a six month's fœtus. These results are not of such nature as to encourage me to hasten delivery. We all know very well that after version is complete and labor has begun, and the head is brought down, that hæmorrhage will cease, and this can be done by the introduction of two fingers. There is very little additional risk in waiting; probably there is a little.

With regard to the occurrence of convulsions in pregnancy, I believe with the last speaker that where there is no labor the results will be just as good where the convulsions of the mother are treated and labor is not induced. I have seen more than one case treated successfully and the labor going on to the normal term and delivery in from four to six weeks after the convulsions, and without any return of the convulsions.

Dr. NOBLE.—I believe that we are all inclined to be prejudiced against accouchement force by our early surgical teaching; but we must remember that what was dangerous in pre-antiseptic days is not necessarily dangerous now, and what would apply then will not apply now. Then it would have been regarded as murderous; but with our aseptic treatment

the whole question must be revised. The question now is whether or not we can improve our statistics by the *accouchement forcé*. With regard to foetal mortality, I was very glad to hear Dr. Longaker refer to the statistics given by Homer and also those of Murphy; these two papers should be studied by all who have anything to do with *placenta previa*; they are classical. I think that the success of Murphy, for he had better results than others, was due to his attending to his work. While he does not deliver as rapidly as Dr. Harris, yet he did work quicker than Braxton Hicks and saved more babies. In another point he differs from Dr. Harris, as he did not use the forceps where the implantation was marginal.

Some years ago I had a rather anxious experience with *placenta previa* for three weeks. The woman did not bleed very much. After dilatation the hæmorrhage ceased, as the head came down and the labor proceeded normally. About this time, I read Murphy's paper, which made me conclude that it was better to follow the rule and not to turn in all cases, except where there has been a sharp hæmorrhage occurring just at the time of delivery.

As regards the induction of labor in convulsions, my experience is that it should not be done previous to the eighth month. I have seen several cases in which labor was induced for eclampsia, only to be followed by the death of the woman in a few hours, and, in one, in half an hour.

Dr. NORRIS.—The discussion has wandered somewhat from the main point. It is not necessary to have immediate delivery in all cases, nor is the child always to be saved by Dr. Harris' two minutes. In a case of eclampsia the child dies because it was nourished by a *pabulum* that is not healthy, and if it lives it is likely to be feeble for the same reason. I

believe that the man who delivers a mother very speedily will predispose the patient to repeated convulsions in the future. If speed is the object, why not resort to Cæsarian section, as our German friends do? In these cases it is only necessary to dilate the uterus. Take Dr. Harris' statistics—half the children die. The incisions and other violent treatment are not advantageous. It has been my practice to wait until the os is sufficiently dilated to deliver with the forceps, especially aiming to do so without injury to the soft parts. This has been my practice at the Preston Retreat, and was my practice before that, when I had seven cases of albuminuria at one time, and all my cases were saved and some were in the early stages of pregnancy. If the doctor should take the advice of Dr. Price, I think that in 100 cases the woman would be in more danger than if she were promptly delivered, for the toxic material will keep on accumulating in the blood. I would not, from my own experience, sanction this method.

As to the method employed, as I have said, I do not think that it is a matter of minutes only. Last year at the meeting of the American Gynæcological Society, I met Dr. Harris and he made me acquainted with this method of operating. I had shortly afterwards an opportunity of adopting this plan in a case of marginal implantation. The whole hand could be introduced into the vagina and I found Dr. Harris' method better than the plan of introducing one finger after another. Here dilatation is more readily practised than in eclampsia. In cases where the head is to be brought down so as to act as a tampon, Dr. Harris' method is to be used; but in eclampsia it is not so advantageous. It is not so necessary to quickly extract the child and expose it to all the dangers of version. In a case

last year I had the pleasure of pursuing this method and of saving both mother and child. I was glad to hear the remark of Dr. Noble about the forceps, and agree with him. Where there is central implantation, version is the operation; but where there is a chance in other cases it is better to bring down the head. Where there is the choice between the forceps and version, the former is to be preferred. In placenta previa the mortality is 66 per cent. in Dr. Harris' report, whereas it usually is held to be 50 per cent.; therefore there is not much gained by rapid delivery.

Dr. HOFFMAN.—In this discussion, it is proper to bear in mind that we are considering two things entirely different in their nature, where the induction of hasty labor is concerned; placenta previa is an anatomical condition, and eclampsia is a physiological condition. In placenta previa, we have only one exciting condition, and that is hæmorrhage. If there is no hæmorrhage, we are not very much concerned about either mother or child. I was very glad to hear Dr. Noble refer to the judicious use of the forceps. I think that if we can use the forceps, it is much safer than podalic version. I do not personally like version by the feet; in one case I ruptured the uterus by this operation. Therefore, in cases where the uterus is not dilated, and is hard to dilate, there is danger of rupture by version; but by the use of forceps there is no such danger. Even in cases of central implantation, where we can penetrate the placenta with the finger and let the head come down, and apply the forceps, it is much safer than to introduce the hand into the uterus in order to produce podalic version.

Now, as far as eclampsia is concerned, we have an entirely different condition to deal with. Here, the convulsions are physiological. Now,

as long as it is a matter of dispute as to what causes the convulsions, just so long it must be a matter of dispute as to what is the best treatment. We have a number of views as to the best treatment, varying from morphine and pilocarpine to surgical procedures; in fact, entirely different methods find supporters. I am entirely in accord with Dr. Price when he says that, in many cases to hasten labor is to hasten death. I have seen one or two cases in which I have hastened death by hastening labor. I have hastened death by the mechanical violence which Dr. Harris has just advocated, and I believe that the amount of violence used in dilating the uterus is a very important factor in producing the death of the mother, and in these cases the child is likely to die anyhow. In eclampsia it is wise to prevent further difficulties by the induction of labor; but in many cases it requires a very great degree of force to introduce one finger after another, as Dr. Norris has spoken about, until we introduce the whole hand; but if we introduce only two fingers, we will have room to insert the narrow blades of the Taylor forceps and bring the head down into the pelvis; we can save the mother and there is less risk to the child.

In puerperal eclampsia it is no uncommon result to lose the child from the effect upon it of the convulsions in the mother. We are often unable to hear the foetal heart beat before attempting to do anything. It is not the labor that kills the child, but it is convulsions which kills it. Therefore, we should eliminate from this discussion anything which would ascribe the death of the child to the efforts of the surgeon to relieve the convulsions.

There is another point I would speak of. We have convulsions due to disease of the kidneys, and convulsions due to mechanical causes

from pressure of the child; these two conditions are very different. Hence arises the difficulty of grouping these cases and of saying that we can save this case by one means, and that case by another means. The difficulty is due to the fact that there are different kinds of eclampsia, and in treatment we must differentiate between them.

Dr. R. WILSON.—In eclampsia the second stage of labor is apt to be a rapid stage, and this fact shows that the uterine forces are acting in a more natural way after the cervix has been dilated. Therefore violent efforts at rapid delivery are unnecessary. Septic infection is more apt to occur in accouchement forcé, therefore, than if dilatation is more slowly performed and labor brought on more gradually. There are many cases in which labor has been brought on to the end of the first stage where the labor has been successfully concluded by natural means. I think that it is proper to consider this in the discussion of the comparative value of accouchement forcé and delivery by more natural means. I believe that the chances of the child are better and the maternal mortality less from slow delivery than by premature labor.

Dr. BOYD.—In the two cases of eclampsia which I reported this evening, the patients were in a desperate condition and there was no evidence of labor having developed. Would it have been wise in those cases to have waited for labor to develop, with the possibility of the patient dying undelivered? If it is wise to empty the uterus in eclampsia, then I think that the method I have mentioned, and which has been described by Dr. Harris, is the most satisfactory one to adopt. In the two cases I reported, labor was brought on in this way. The patients were not in labor; Dr. Harris' method was practised and they did not die. My ob-

ject, however, in reporting these cases was to bring up for discussion the various methods of emptying the uterus rather than the merits of accouchement forcé.

Dr. J. M. BALDY reported two cases of

HYSTERECTOMY FOR PUERPERAL SEPTICÆMIA,

and exhibited the specimens.

The first patient was unmarried, about twenty-five years of age, the subject of a criminal abortion. She was brought into the hospital in a state of sepsis. The uterus was large and soft, she had pus tubes and a foul discharge from the vagina. Her condition was such as to warrant an attempt to save her life by a hysterectomy. The broad ligaments were involved and adherent, and pus was found in the tubes and also in foci in uterine wall; the uterus contained sloughing shreds of placental tissue. Patient's condition improved at once as regards sepsis; but she perished on the fifth day with pneumonia, which was not regarded as septic in origin. The second case was a married woman, who had a miscarriage from unknown cause, and was admitted ten days afterward. Curettement had been carefully done before she was transferred to the surgical ward, five or six days later, when her condition was steadily getting worse. The uterus was very large and the broad ligaments were involved, but no pus tubes were found. At the operation puerperal cellulitis was discovered. The septic condition continued and the patient died very soon.

It was insisted that the hysterectomy does not add materially to the gravity of an operation, since it can be done in nearly the same time or may require ten minutes longer than a double oöphorectomy. The pus being the source of infection, it

should be removed, and if it is considered justifiable to remove pus tubes from such cases, it is equally justifiable to remove the uterus when it is the site of pus collection, as shown on section of the uterine wall. The field of the operation of hysterectomy for puerperal sepsis is acknowledged to be a small one. If one hundred cases of this character are abandoned to their fate they are doomed to die; whereas, if by operating upon them a few may be saved, then hysterectomy has demonstrated its usefulness. One or two such cases have been reported, and in the course of a few years more will undoubtedly occur. It is necessary, however, to insist that a specialist shall be called in early to study the case carefully before the operation is imperatively demanded by the condition of septic poisoning. Moreover, better results will be obtained from early operations. At the same time it is acknowledged that only a small proportion of cases operated upon may be saved, and also that by operating early some cases will be operated upon who would have recovered without the hysterectomy.

The specimens show the presence of pus in the uterine wall in the first case, with pus tubes; and in the second, pelvic cellulitis without pus tubes. This is due to direct infection through the patulous tubes, and is not secondary; it is only found in the parturient state, and is always acute, and never a chronic condition. The patient either dies or rapidly recovers from it.

Discussion.

Dr. LONGAKER. — What would have been the chances of success in the first case if treated by curettement?

Dr. SHOEMAKER. — It seems to me that Dr. Baldy makes an error in

the loose use of terms. For instance, the first case was not one of puerperal sepsis, but of pus tubes after abortion, and the use of the curette would have done more to save the life of the patient than a hysterectomy. The second case was one of sepsis. Now the experience of surgeons is that when the toxins of septic poisoning have been introduced, then we get the best results by securing free drainage and by treating the general condition. I think that Dr. Baldy has done well to insist upon the removal of the pus tubes in the first case; but in the second case he would have removed the original focus of infection by obtaining proper drainage.

The result in these two cases bears out what we already know, that the removal of the focus of poisoning after the poison has spread to the whole system, does not cure the patient. It is remarkable what good results have been obtained by cleaning out the uterus and fighting the case by medical means, by which we can save a great many of these cases by methods now in use. If a case occurs in the slums, it is true, we cannot always secure such treatment.

In the second case, Dr. Baldy states that there was catarrhal pneumonia and that three lobes were involved. It occurred to me, as he read it, that when three lobes of a lung are involved that it must be a case of croupous pneumonia, and, as this form is especially likely to occur in septicæmia, he can hardly point to the lung in confirmation of the statement that the patient was entirely free from any septic condition.

Dr. NOBLE. — There have been several cases of hysterectomy after labor, three of which have recovered. One was operated upon by Dr. Kelly in Maryland; it was done a week after confinement, and the patient made a

good recovery. She would have died had not this operation been done. Another case was that of Lapthorne Smith in a woman with sharp sepsis, and no improvement resulted from usual treatment; he did a hysterectomy and the patient recovered. The third case was a German case, where the uterus had been curetted a number of times, but continued to discharge foul detritus. A hysterectomy was done and the woman recovered. There have been a number of fatal cases besides those of Dr. Baldy. One by a Dr. Boldt died of septicæmia. My own view is that the field of puerperal hysterectomy is small. Puerperal hysterectomy is indicated very rarely, as the rule, later than a week after labor. If early after labor we find sepsis appearing and treatment by douchement, curettage and quinine fails to prevent the spread of the sepsis, it is time to operate. If the septic condition has become very marked and there is spreading peritonitis the patient will die. There is not one case on record for puerperal septicæmia after the first week where hysterectomy has saved the patient. It only adds shock and the woman only dies a little earlier than without it. The proper field then is early when sepsis is commencing. I believe that by its aid a goodly percentage of such cases can be saved. I think there is no doubt that hysterectomy will be done with removal of pus tubes at a later period; but these are different classes of cases and the symptoms are not so urgent. Pus tubes develop in the second or the third week and we find a large, sub-involuted uterus with the pus tubes. Perhaps in a number of these cases the uterus might be also removed; but this is a mere question of technique and not as in the other class of cases. So much for the hysterectomy. I am glad to see that Dr. Baldy's experience has broadened. He has found that cellulitis occurs in

puerperal cases, and, as his experience extends, he may find it in cases non-puerperal.

Dr. HOFFMAN.—I always like to hear Dr. Baldy talk, as he talks from conviction. However, I too have seen cases and I do not believe in pus tubes apart from infection; that is to say, there is never a case of pus in the uterus apart from tubal or ovarian disease, unless there is a dirty operator behind it. In other words, a retained placenta does not of itself cause pus in the uterine walls. If it does I should like to know it. I have known cases in which the placenta remained for a year, and I have known it to remain until a second pregnancy occurred, causing it to abort at the sixth month. The old placenta was thrown off with the miscarriage.

As far as operations for the removal of the uterus are concerned, for puerperal fever and septicæmia, I am perfectly free to acknowledge that there may be a field for it. There is nothing absolute in this world, and I am perfectly willing to leave it, as Dr. Baldy has said, in the hands of an expert, and after he gets his experience, I am willing that he should be the expert.

It should be remembered that there are cases which get well after operation which would have gotten well without the operation, and do not get well on account of the operation. For instance, if I discover pus in the broad ligaments, there is no reason for believing that the patient will die. Dr. Noble believes in cellulitis even more firmly than I do; but to say that there is lymph in the broad ligaments, found at the operation, it is not necessary to conclude that it was necessary to remove it in order to save the patient's life. Or, if we find the uterus to be the site of pus, it is not to say that by removing the uterus we will remove all source of further infection.

Dr. M. PRICE. — I am convinced that there is a wide field in puerperal conditions for exercising the art of the surgeon; but I am just as fully convinced that there is nothing to be gained by removal of the uterus, unless it is shown that the condition is caused by it. I am greatly obliged to Dr. Baldy for bringing these specimens before us. The operation for the pus tubes was a very proper operation. I have seen many cases die from delay on the part of the surgeon. There are many cases in this state, where there is a temperature of 103 to 104, where I defy any man to put his finger upon a spot of septic infection. About a year and a half ago, I saw a case with Dr. Keller; it was a married woman who was septic for five weeks after confinement and had a good recovery. I think that in such a case any operative interference would have been attended by risk of life.

Now, I would like to answer Dr. Norris. He says that there is no case on record where puerperal peritonitis recovered. Now, I have operated upon four or five where the abdomen was full to the diaphragm with pus. I have seen Dr. Joseph Price operate upon fifty (50) cases of this kind, where he opened the abdomen and discharged the pus, washing them out afterwards, and he did not lose ten cases. The inflammation was general and these cases were not in the first week; indeed we rarely find a woman in such a septic condition at the end of the first week. I am fully in accord with Dr. Baldy in the opinion that where such a condition is found that a specialist should be called in, and I just as fully agree that he should be a specialist to test his belief by operating.

Dr. HOFFMAN. — I would like to speak of a case of general peritonitis, which occurred some years ago, when I was assisting Dr. Howard Kelly. The patient lived on the line of the Phil-

adelphia, Wilmington and Baltimore Railroad. Dr. Kelly was called in consultation and he decided to operate. The pelvis and abdomen were full of pus; the abdominal cavity was so full that I baled it out with my hands, and it was then flushed out with hot water. The entire abdominal cavity was full and the patient got well. If this was not a case of general peritonitis, I do not know what it was.

Dr. BALDY. — If anybody has listened to my discussions and read my writings on the subject of cellulitis and has gained the opinion that I have no belief in puerperal cellulitis, he has heard and read to little advantage. I have always admitted it as an acute condition in the puerperal state, either killing the patient or becoming entirely cured. I have just as persistently denied its existence as a chronic condition and reiterate that denial.

Now, to reply to Dr. Shoemaker's objection. The very reason for which the operation is devised is that the patients should not go into a deeper septic condition from septic absorption from the uterus. There is a time in which the blood is not too much infected but that the patient can be saved, and I feel quiet sure that at that time a certain number of cases can be saved by hysterectomy. I am very glad that he has raised this point; it is just the ground I would take.

The statement has been made that sepsis is always due to traumatism. It is true. Criminal abortion is traumatism; therefore, the condition exists. The site of the placenta, even in ordinary labor, offers a sufficient place of entrance. We all know how likely these abortion cases are to become infected.

I have said that the field for this operation is a small one; the field is small, but it does exist. As the rule these cases die; some may be saved

by operation. There are a few such cases on record.

As regards the time for the operation, there is no question but that the earlier the operation the better. Out of one hundred per cent. of these cases that now die, a certain proportion might be saved by early operation. Therefore, I say that a specialist should be called in early and in time to study the case. No one can say that the limit has been passed in any case and that the result is necessarily fatal. All of us have operated upon cases where we thought that the patient was going to die and they recovered, and on other cases which we thought would get well but they have died. It is not fair to abandon these cases to die without an attempt at least made to save them. If there are a hundred cases and we believe they are all going to die, we are dooming them to death by leaving them alone. If only a small proportion may be saved by operation, we should give them the chance.

As regards the pus in the uterine

wall and not in the tubes, I cannot understand the position of the gentlemen. If we have pus in the tubes and the patient is dying with sepsis, we would remove the offending organs. Then why not when the pus is in the uterine wall? If pus can be pressed out on the surface of the section of the uterine wall, as in this case, I do not see why it should not be removed. Their position, to say the least, is inconsistent.

It is to be observed that the first patient would have recovered had she not contracted pneumonia. According to the opinion of all who were present at the post-mortem examination, there was no evidence of sepsis at that time. It was about two weeks after delivery when the operation was done. A still earlier operation would have given better chances of recovery, but the earlier the operation is performed the greater will occur the number of cases which would not have needed the operation and would have recovered without it.

Transactions of the Detroit Gynæcological Society.

MEETING of March 6, 1895, the President, Dr. E. T. TAPPEY, in the chair.

REPORT OF A CASE OF ECLAMPSIA,
WITH REMARKS ON THE SUBJECT.
BY DR. A. N. COLLINS.

*Mr. President and Fellows of the
Gynæcological Society:*

I regret exceedingly that, owing to the prevailing epidemic, I have had no time to prepare a paper on the subject of "Prolapsed Ovaries," chosen by me, and will beg you to accept in its stead the report of an interesting

case of eclampsia which I have recently had under observation, with some remarks on that dread condition.

The not very uncommon condition of puerperal eclampsia is certainly one of the most alarming and dangerous met with in our obstetric practice, second only to post partum hæmorrhage — perhaps — and in many cases more dangerous and deadly and less easily combatted than hæmorrhages. Owing to its great importance I have assumed to take the liberty to glance over the main points of this subject in connection with my report.

The relative frequency of eclampsia is variously stated by different observers, ranging from one case in six hundred to one case in less than three hundred deliveries. According to the statistics of the Philadelphia Board of Health, in five years, from 1880 to 1884, inclusive, there were 100,935 deliveries, with 94 cases of death from eclampsia. If this mortality represented only one-third of the cases attacked — which seems to me a higher rate of mortality than we are warranted in assuming, — we have one case of eclampsia in a little over every three hundred deliveries. Statistics also show us that primiparæ are much more susceptible than multiparæ. Hecker reports 28 primiparæ in 33 cases. Döchlein found the percentage in women pregnant for the first time 85.5 per cent., and Winkle in 683 eclamptics found the ratio of 77 per cent. In the vast majority of cases, the convulsive seizures are synchronous, or nearly so, with labors, though Bently reports a case developing the crisis twenty-nine days after delivery. Baudelocque reports one six weeks after. There is great difference in various reports of the fatality of this disease, ranging from one death in every two cases, to a mortality as low as 3.3 per cent. The most trustworthy statistics I have been able to obtain place the mortality at about 30 per cent. But we must not forget that these statistics are largely gleaned from hospital reports, where every advantage is given in handling the cases, viz., competent practitioners experienced in the disease, facilities for proper and thorough application of the remedies, and often times opportunities for beginning treatment before the convulsions appear. In private practice, few cases are seen often for the first time, and often facilities for handling the disease are clumsy and inadequate. I have no doubt, could the true statistics of all cases be gathered in general

practice, we would find an alarming mortality.

As early as 1842 Lever pointed out the close relation between eclampsia and albuminuria. That there is an almost constant relation between the toxemia of eclampsia, and the condition of the kidneys, shown by the scanty albuminous urine, I believe to be an indisputable fact. The chemist or physiologist may not even yet have been able to say just what excrementitious product has failed of elimination and gives rise to this terrible spasm, but, in view of the fact, it seems to me unreasonable to doubt that this failure of the kidneys to properly perform their function, allowing to remain circulating and accumulating in the blood these possibly multiform poisons of tissue metamorphosis, gives rise to the terrific nerve irritations seen in eclampsia.

Concomitant with this failure of elimination, we have albumen in the urine, which seems a true and constant index of the general failure of the kidneys to perform their functions. These facts guide us to the most successful treatment of these cases, and no doubt the albumen in the urine has been the red flag of danger which, seen in time, has put the physician on his guard and prompted him to begin an eliminative treatment early enough to ward off the calamity, or, failing, has relieved the kidneys by evacuating the contents of the uterus.

Why the kidneys fail to do their duty is a broad and still mooted question. Pressure upon the urinary apparatus has received most credence, whether upon the renal vessels, or upon the ureters, it matters little, and has little bearing upon the practical management of these cases. These points are still waiting to be cleared up, as are many points connected with this disease. What interests us as practitioners most is how

to prevent and how to cure the disease.

I wish to report a case that recently came under my care, which, in some ways, is typical of this much studied condition, as there were points of interest bearing upon cause and treatment. Cases have been reported, not often of convulsions at this period, called puerperal eclampsia, where albumen has not been found in the urine. I believe these cases to have been convulsions due to reflex nerve irritation—conditions which do not properly belong in the category of eclamptics, due to other sources of irritation than the poisons of non-elimination, such irritations as distended bladder, hæmorrhoids, irritable cervix, etc. Cases have been reported of convulsions coming on as early as the fourth month, and occurring at very close intervals for weeks and being completely relieved by an abdominal supporter, thereby relieving the pressure from some tender point, like an inflamed ovary or plexus of nerves. These are the cases in which opiates would most readily control the spasms.

Mrs. —, aged 35 years, has had ten children, born at close intervals; has had little time to recuperate between confinements. Saw patient once, two months previous to time of expected confinement. No œdema, but complained of irritable bladder, of frequent micturition and sense of pressure upon the bladder. Prescribed tincture digitalis, potash acetate, sodii benzoatis in infusion bucu and laxatives. Requested that the urine should be measured for 24 hours, and specimen sent me for examination. This was not done.

Was called at 2 A. M. February 25. Found patient having very moderate pains, os beginning to dilate, terrific headache, flashes of light, sensations and at times blindness, very excitable, hard shotty pulse, but no nausea. From these symptoms I looked for

convulsions; though the patient stated she had passed water freely—bowels had not been evacuated that day. I immediately sent for 20 grains each of calomel and compound jalap powder, divided in two powders. One was given. A hypodermic injection of $\frac{1}{20}$ grain strychnia sulphate was given, which soon stimulated the pains to effectiveness almost immediately. Gave chloroform, and by manual dilation of the os assisted the delivery, which was rapid.

In about an hour child and placenta were delivered, and the gratifying hæmorrhage was quite profuse. At that time all evidence of an impending seizure was wanting. I then drew about an ounce of murky urine, and upon boiling found it so filled with albumen that it would not fall from the spoon in which it was boiled. Then gave 10 grains each more of the calomel and jalap powder and large doses of tincture digitalis and acetate potash every hour. Ordered as much water to be taken as possible, and left the patient feeling well. In about two hours was sent for, and found the patient in a terrible convulsion. Chloroform was administered as soon as possible. Injected 60 grains of chloral hydrate into the rectum; gave 15 grains each of calomel and compound jalap powder. Patient was in comatose state, with very rapid, steady pulse, and temperature of 103°, face livid, and stentorian breathing. Injected five minimos fluid extract veratrum viridi. This modified the breathing, and slowed the pulse perceptibly, greatly relieving the arterial tension in a few moments. Gave 10 minimos more of the veratrum, which was followed very soon by marked slowing of pulse and relief of arterial tension. Injected four ounces of sulphate magnesia into rectum, and wrapped patient in woollen blankets wrung out of hot water, as hot as could be borne. Another seizure

seemed imminent, shown by tremors of lips and eyelids. Chloroform controlled this. Patient fell into natural sleep with profuse perspiration, and continued free from evidence of convulsions till 10 A. M.; then had another seizure, when 60 grains of chloral and 4 ounces magnesia sulphate were injected and 15 minimos of veratrum given, which in this case worked well in slowing the heart and relieving arterial tension. All symptoms now seemed relieved. Water poured copiously, and bowels moved freely. At 9 o'clock P. M. patient was put in dry blankets. Urine tested and found almost free of albumen and plenty in quantity. Patient apparently well for four days. Bowels moved three or four times daily. Diet of milk, rice, soup and gruel.

On the fourth day was called hurriedly and found patient in convulsions again. Same treatment was again adopted. Urine was found scanty and loaded with albumen. Next day patient seemed again free from danger, and has so continued with decreasing amount of albumen each day. The fact of the convulsions and albumen returning and disappearing synchronously seems conclusive evidence of their relation.

I would sum up the subject with a few conclusions drawn from this and other cases, as follows:—

1. That eclampsia is due to poisons in the blood, which normally are eliminated by the kidneys.

2. That albumen in the urine is a valuable and constant index of this failure of the kidneys to perform their function, and taken in conjunction with the quantity of urine passed is our guide to rational therapeutics in these cases.

3. That our plan of treatment should be to call into action all the emunctories that will assist the kidneys in this work of ridding the system of these poisons,—the skin

by hot packs or vapor baths or dry heat; the bowels by catharsis, and the kidneys by copious draughts of water, rather than by irritating diuretics.

4. That in chloral hydrate, and veratrum viridi we have two very efficient drugs to relieve the actual spasm and slow the heart, thereby lessening the intense cerebral congestion upon which many of the phenomena of this disease depends, and that in chloroform we have the ideal remedy to control the spasms.

Discussion.

Dr. J. J. MULHERON.—This subject is always an interesting one. We are still in doubt as to the *materies morbi* in this grave condition of things, but, whatever the cause is, of course the most successful treatment is that which most successfully opens the emunctories and relieves the system of the poison. Dr. Collins' cases have been interesting, particularly in connection with the success of the agents which he has employed. I have had but little experience. In the past three years I have seen three cases in the practice of other physicians. In the first of these the convulsions were the most terrible I have ever witnessed. The patient, a large woman, had been delivered in the morning, and the convulsions supervened about noon. The physician had been with her from 7 o'clock, and he had tried chloral, veratrum viridi and morphine without avail; there was a continuous succession of convulsions. The injected eye and the appearance of the face suggested venesection, and I opened a vein and bled her about a quart. The convulsions immediately stopped and did not return.

The next case had been in convulsions for three days, almost continually. She was under the charge of two physicians, and, singularly

enough, these gentlemen had not examined the urine. I found it similar to that in Dr. Collins' case. The woman died. The third case, the wife of a government official in Washington, presents some peculiarities. The physician in charge, and at whose house she was staying, was on the lookout, but there had been no premonitory symptoms. One morning he received a letter from her husband, and, opening the door, he threw it on her bed. She called him a short time afterwards and said: "Doctor what is the matter — I cannot read this letter?" The doctor opened the curtains to let in more light, but that did not improve matters. She looked up and said: "I cannot see you either." He sent for me, and before I got there a convulsion had supervened. I drew the water and found it heavily loaded with albumen. Labor was at once induced. It took four hours to dilate the os sufficiently, the woman being kept under chloroform the whole time. For three hours the os was very rigid; then I performed venesection, after which the os opened up, and the convulsions were controlled. The next day the patient was better. The husband came on and was there three weeks, when one morning she woke up and seemed surprised to see him, and although she had talked to him during the whole of the time since his arrival and with apparent intelligence, her mind had evidently been a blank. Everything between the time of her delivery and this morning, she was utterly unable to recall, although to those about her she was apparently interested in what was going on.

Of course the presence of albumen is very significant, but we often have albumen without convulsions, so that the causal relation is not established. The presence of albumen shows a disturbed condition, and is probably usually indicative of the retention of

poisonous matter in the system. I think if we can get a large quantity of water, the presence of albumen in it is not of much significance; but with a small quantity of urine it is always a dangerous sign. The treatment consists in stimulation of the kidneys to active secretion without having in view so much the removal of the albumen from the urine. I have great faith in the exhibition of Bashan's mixture and the skim milk diet. I am generally very successful in securing a free secretion in this way. I make it a rule not to attend a woman unless I have been engaged in advance, and to this fact is doubtless largely due the practical non-occurrence of puerperal eclampsia in my practice. My experience warrants me in believing that the disorder is amenable to prophylactic treatment.

Dr. W. F. METCALF. — We cannot but agree with those who have spoken as to the treatment. I recall a few cases. In the first the temperature when I was called was 108°. The convulsions began the third day after labor. She had been attended by a midwife, and during the time intervening it was claimed that she was perfectly well. She died soon after I saw her. In the next case I made a sweat cot and very soon got the skin and bowels acting, and the result was recovery. An interesting condition presented itself in a case I had about a month ago. I was engaged to attend a woman in confinement, and, as is my habit, I made an examination of the urine, and found considerable albumen, perhaps thirty per cent. by volume. I put her on a milk diet and gave digitalis, and to my surprise, forty-eight hours later there was not a trace of albumen. As to the etiology of the convulsions, as far as my present knowledge goes, I have not a doubt that it is due to the retention of poisonous products in the urine. I recall two cases of nephritis

which had convulsions similar to puerperal convulsions, and which were relieved very readily by venesection.

Dr. EMMA COOK.—I had a case lately which, at least to me, was unique. I was called to attend a primipara who was supposed to be about four weeks from full time. I examined the urine and found from twenty per cent. to thirty per cent. of albumen. I gave her a saline cathartic, and the same night was called to attend the case in labor. I was quite apprehensive of danger. I gave two grain doses of quinine every hour, and from the time the labor began until delivery she went to sleep between pains, frequently snoring. Labor progressed very nicely and terminated satisfactorily. She had no convulsions and no trouble afterwards.

Dr. W. P. MANTON.—The subject is an extremely interesting one, and the cases related by the doctor demonstrate the success of his line of treatment. He, however, in his preamble, fails to differentiate between cases of convulsions that occur before labor and those that occur after. I think, if statistics are consulted, it will be found that the mortality in cases which occur before is much greater than in those which take place after labor has been completed.

The name puerperal convulsions is unfortunate; there should be something to distinguish between the purely nervous and those due to some toxic principle in the blood. It seems to me that the kidneys before and during the convulsions should be given as much rest as possible, instead of urging them to secrete a larger quantity of urine. I think we can accomplish this by cathartics and baths. I have never had much faith in *veratrum viridi*, although I have tried it at the Woman's Hospital. In two cases I had the last month of

my service, it seemed to work well. I rely on a brisk cathartic, sweating, a combination of bromides and chloral hydrate, and chloroform anæsthesia. My experience has been that those cases are particularly serious that come on without warning, and in which up to labor no trace of albumen can be found, though the urine becomes loaded afterwards. The question of the toxic principle has been under investigation several years. A French observer has lately isolated a toxine which is not used, but which will produce the typical convulsions in animals.

Dr. W. B. SPRAGUE.—I have no experience with puerperal eclampsia, but I would like to ask, if it is not digressing too much, whether it is justifiable to produce labor when called to a case of threatened miscarriage before the viable stage, if the symptoms are not very threatening; or whether it is better to try and prevent it if there is albumen in the urine. I had a recent experience. I was called with another physician one night to see a woman who was a patient of a homeopath. We found the patient having labor pains. Her face was bloated and we both thought it was probably a case of albuminuria. He decided to give a hypodermic injection of morphine and the pains subsided. We thought by the dates she gave that the child was not yet viable. Then the case was left with me. I found about 50 per cent. of albumen in the urine. I gave diuretics and cathartics and the patient was doing very nicely, when her own physician returned and induced labor and told the woman that the treatment given was the worst possible.

Dr. H. W. LONGYEAR.—I am doubly interested in this subject, for I think the amount of knowledge we have is exceeded by the knowledge we have not, but which we should all hope the near future will give us. There has been a great deal said on

the treatment, both of threatened convulsions and after the eclamptic signs begin, and I am in accord with the writer of the paper, that the treatment should be, as a rule, by elimination; but, as Dr. Manton has said, cases are not all due to albuminuria; there are nervous cases which are exceptions, and should be treated accordingly. Albuminuria does not always mean convulsions, nor do convulsions always mean albuminuria, and if a pregnant woman has albuminuria it does not mean that if she dies she will necessarily die of convulsions. I have seen several die with all the symptoms of cerebral effusion with no convulsions. I have seen cases where the treatment for elimination has been successfully employed, and even then they have died with the symptoms of cerebral effusion. I was criticized by some of the members of the American Association of Obstetricians and Gynecologists in Toronto for making the assertion that in cases of albuminuria with a scanty secretion of urine we should induce labor. I believe that course to be justifiable. I do not mean that we should deliver directly we find albumen in the urine, but where there is also persistent secretion there is certainly danger ahead. I think we should thoroughly try the eliminative treatment, but if after that the urine continues scanty enough to indicate an increasing system in retention of waste material, whether the amount of albumen is large or not, I believe the safest way is to deliver the woman—deliver her *before* you are handicapped by dangerous symptoms. I have in mind a case which I saw with Dr. Gailey. He discovered the albumen about the seventh month. The urine was fair in quantity, but he could not increase it. We used cathartics and other eliminatives as actively as the patient could bear, but one morning she awakened with headache, flashes of light, etc. She

became worse and we decided to deliver. This was safely done without convulsions occurring. The urine increased, and after twenty-four hours the patient seemed on the high road to recovery, but she began to get gradually comatose and died with the evidences of cerebral effusion, but without convulsions. We must not lose sight of the fact that albuminuria, when long continued, is liable to cause tissue changes that may cause a fatal issue even after the kidneys have resumed their normal function.

Dr. J. H. CARSTENS.—The question is what causes albumen in the urine? There is no doubt at all that there is some condition of the blood or the uterus which causes irritation of the solar plexus of nerves; the whole trouble is a trouble of the sympathetic nervous system. In some cases you find no albumen in the urine at one time, and it is there a short time afterwards. This has led to the mistake that it is possible to have convulsions without albumen in the urine. This is not so; you never see a case of convulsions without albumen in the urine; there is an absolute connection between the two. Having fixed that in your mind the next point is that if you find albumen in the urine you have a dangerous case, and if by proper treatment that patient is not improved promptly, she is liable to puerperal convulsions; hence, she is to be delivered immediately. Another thing is a woman who is pregnant ought to be under the control of a physician almost from the time she becomes pregnant. Sometimes with even a small amount of albumen the pressure or the shock of labor is just sufficient to give the finishing touch to the kidneys and cause convulsions, though these soon subside and the patient generally gets well. Now the question is, how are you going to manage these cases? Well, the plans of treatment

that have been suggested are good. If you bleed ever so little it may be just enough to relieve the pressure and stop the convulsions, but the great principle of treatment is to rest the kidneys, not try to stimulate them. You can act on the skin and the bowels and let the kidneys alone. You can give aconite, antispasmodics of various kinds, chloroform and morphine,—anything as long as you let the kidneys alone.

Now, what do we know about convulsions as convulsions *per se*? Absolutely nothing; no more than we know of the convulsions of children, or why one child will have paralysis of this or the other nerve following them, while another child may have fifty convulsions and no paralysis. No doubt there is some kind of irritation or lack of blood supply to the brain, and sometimes there is rupture of a vessel in the brain, and then you have paralysis. When a woman has albuminuria she should be very carefully watched and premature labor

should be brought on at the proper time, and in nearly all cases. Again there are cases in which a child is very much desired, and, after pointing out the danger, if they wish to take the risk, you may be able to jog them along, at least until the child is viable. In the case Dr. Sprague has mentioned, I think the homeopathic physician was right, although he should not have put it in that way. I would have let her abort, because a woman generally has convulsions with the first child only; seldom with second.

Dr. COLLINS.—I would like to reply to Dr. Carsten's remarks on rest for the kidneys, that I used the acetate of potash for its diathoretic not for its diuretic effects. I think it is universally acknowledged, as Dr. Manton says, that convulsions following delivery are less dangerous than those preceding it, yet I think where they come on the fourth or fifth day with marked albumen and scanty secretion of urine, they are apt to take on a very bad form.

REVIEW OF GYNÆCOLOGY.

A CASE OF DOUBLE VAGINA, WITH OPERATION. By DR. HUNTER ROBB.

The history of the case is briefly as follows: L. H., aged 20. Family history good. Has been married 3 years. Nulliparous. Her catamenia first appeared at the age of 14; they were regular and usually lasted three days, the flow being free and unaccompanied by pain. The last menstrual period occurred three weeks before she applied to us at the dispensary. There had never been much leucorrhœal discharge. Her bowels had always been regular. She had not suffered from any urinary

disturbance. Beyond this her personal history was negative. The patient came to us complaining of dyspareunia and of severe backache with bearing-down pains, and at times of a burning sensation during urination. Her general condition was good, but it was noted that the thumbs on both hands were curiously undeveloped, being rather short, so that she is scarcely able to make the tips of the thumb and of the little finger meet.

Examination under anæsthesia; the following notes were made at first: "The mucous membrane about the vaginal orifice is much congested, the urethral orifice is dilated so that the

first finger can be easily introduced into the bladder. The vaginal orifice itself is narrow, making the examination difficult. The cervix points downwards and the external os is patulous. The uterus is turned forwards, is freely movable, and is slightly enlarged, its surface being somewhat roughened. The right ovary is small and freely movable. The left ovary cannot be satisfactorily palpated either by examination made through the rectum or the vagina, but with the finger in the bladder the ovary can be easily made out and is found to be small and freely movable."

I had almost overlooked what proved to be the most interesting feature of the case, but my attention having been called to some further abnormality by a member of the class, upon re-examination I found that the examining finger could also be inserted into another opening in the vagina near the left lateral wall. This proved to be a second canal, which extended nearly the whole length of the vagina. A distinct membranous band of tissue separated it from the first. The measurements of the parts were noted as follows: From the upper border of the perineum to the clitoris 6.5 cm., the remains of the hymeneal folds being found 1.5 cm. within the vagina. The hymen had been centrally perforated; on bringing the portions of the ruptured membrane together the vaginal orifice can be obliterated. The urethral orifice, which is easily dilated to a circumference of 25 mm., forms a depression above the upper limits of the hymeneal fold. The mucous membrane about the urethral orifice is intensely congested. Near the left side of the vaginal orifice there is an area of superficial ulceration measuring 1.5 cm. in diameter. The left lateral cavity is 6 cm. in

length, the right 6.5 cm. The cervix uteri occupies the right vagina, being entirely shut off from the left vaginal cavity, which ends in a blind pouch. The pelvic measurement between the two anterior spines is 25 cm. The direct conjugate is 10 cm., and the intertrochanteric measurement is 30 cm. There is also a marked diminution of the hip prominence. The pubic hair runs up into a point towards the umbilicus, after the male type. The vulva externally looks normal. Furrows in vestibule on either side measure 12 mm. in breadth. The escutcheon is well developed, and the breasts look normal.

The operation was performed on March 25, 1894. Upon introducing the blade of a Sims speculum into either orifice, the membrane which divided the two cavities could be easily demonstrated along its whole length. One finger of the left hand was passed along either side of the septum, which was then separated with scissors from without inwards as far as the cervix uteri. The uterine sound was next introduced through the cervix to determine whether or not a septum existed also in the uterus or the cervix, but none was found. The length of the uterine cavity was 7 cm. The vagina was then thoroughly irrigated with normal salt solution and 10 per cent. iodiformized gauze introduced. The patient made an uninterrupted recovery, leaving the hospital in five days, and has since returned to the dispensary saying that she feels well in every respect, the dyspareunia of which she complained being entirely removed.

In this case it is worthy of note that the urethral canal was used for sexual intercourse.

These congenital anomalies of the genitalia are always interesting, and this one deviates somewhat from the form of double vagina usually met

with. It will be remembered that, embryologically considered, the uterus and vagina result from the approximation and coalescence of the second and third portions respectively of the Müllerian ducts. Should for any reason the septum fail to disappear, *i. e.*, if coalescence be incomplete, a double uterus or a double vagina or both result, and the double vagina most frequently met with is undoubtedly to be accounted for in this way. But another possibility has to be considered. The third portion of the Wolffian duct (ducts of the mesonephros) runs down on the lateral wall of the vagina and sometimes persists. This duct, commonly known in this region as Gartner's duct, is occasionally patulous; it sometimes opens into the vagina, and may be dilated into cysts of smaller or larger size (vaginal cysts in women and cows). The lateral disposition of the smaller of the two vaginal canals in our case, and the fact that it terminated in a blind sac and was not connected at all with the uterus, might be adduced as evidence of its origin from the Wolffian duct, but on account of its size we are rather inclined to accept the view that the case represents a somewhat unusual double vagina from noncoalescence of the lower third portions of the Müllerian ducts. (*Johns Hopkins Hospital Bulletin*, 1894.)

AFFECTIONS OF THE EYE, APPARENTLY DEPENDENT UPON UTERINE DERANGEMENT. By RICHARD H. DERBY, M. D.

That certain disturbances of vision have their origin in diseases of the uterus and irregularities of the menstrual function has been well established by competent observers. Especially has Mooren, in his "Visual Disorders and Diseases of the Uterus,"

drawn attention to this casual relation, and more recently, in an exhaustive monograph entitled "The Uterus and the Eye," has Dr. Salo Cohn written upon the same subject. Ophthalmic literature of the last few years contains much from other authors bearing upon this matter.

The writer does not claim that in all the cases, which he here presents, an absolute causal relation between the visual derangement and the anomaly of the genital function has been established. A strong probability that such a relation existed has led him to think that the narration of the cases would be of interest. If this publication serves to stimulate others, either in gynæcological or ophthalmic practice, to make public their observations in this direction, the purposes of the present contribution will be amply justified.

CASE 1.—Patient, R. R., a girl of eleven, large for her years, has grown excessively of late and her form maturing, has never yet menstruated, came under observation March 3, 1888. She states that this morning, on waking, the edge of the door looked indistinct. She closed the right eye, and all objects seemed in a gray mist, a condition that partially disappeared as the day wore on. There is a central scotoma of left eye. Vision less than .2. The ophthalmoscope shows nothing. The right eye vision 1, and emmetropic.

March 17th.—Condition unchanged.

March 19th.—With + 2.5 D reads Sn. No. 9, and sees movements of hand over the periphery of the field. There is of this left eye a light neuro-retinitis.

March 24th.—No vision of left eye beyond perception of light outwards. There is a well-marked optic neuritis, the most prominent niveau of the papilla well seen with + 7 D. Mercurial inunctions and increasing

doses of iodide of potash were ordered. She complains of pain in the eye, occasionally of a sense of rush of blood to the head, of palpitation of the heart, of headache. This condition of the vision lasted until April 4th, and the vision remained practically *nil*. The mother reported not infrequent hysterical attacks.

April 4th.—Movements of the hand were seen over the entire periphery of the field.

April 13th.—She counts figures outwards.

April 16th.—She sees Sn. *lxx* held a foot away, and movements of the hand over a broad peripheral zone of the retina. The outer limit of the papilla is now clear, the vessels less injected, and the most prominent surface of the nerve is seen clearly with + 3 D.

April 29th.—Vision is .1.

May 2d.—Vision .2; reads De Wecker 7.

May 4th.—No demonstrable scotoma.

May 9th.—Reads De Wecker 1 close at hand, Vision .4.

May 19th.—Vision is .6.

From this time the improvement of the vision went on until it became normal, and the ophthalmoscopic picture of a neuritis cleared up. Early in the summer the patient was seen again. The general health was excellent, the menstrual function was established in July.

A. v. Graefe drew attention to the fact that neuro-retinitis, dependent upon menstrual derangements, was not uncommon. Leber found inflammation of the optic nerve in cases where the first appearance of the catamenia was delayed, or remained absent altogether. He refers to a case especially interesting in this connection: A girl of eighteen, with imperfectly developed genital apparatus, had never menstruated. She had

simple optic nerve atrophy, possibly in consequence of a retrobulbar neuritis. The disease had developed with headache, dizziness, abnormal tendency to sleep, and weakness of memory. The one eye was amaurotic, the other highly amblyopic, and with marked limitation of the field. Under treatment the general symptoms subsided, but sight was ultimately completely lost.

CASE 2.—Annie H., aged twenty-three, single, came to the Infirmary February 22, 1893. During the last menstrual period, eight days ago, patient, while at work, felt as if something swept forward and back in front of left eye. The previous evening she had gone out in thin shoes, and exposed herself in very inclement weather. During this entire menstrual period she had a headache, a thing unusual with her. The vision of the left eye was reduced to .1. There is a marked increase in the size of the blind spot. In the centre of the field was dimness, but no demonstrable scotoma.

In the region of the macula there was œdema and exudation, directly below it a fresh hæmorrhage in extent equal to the diameter of the disc. The fellow eye was normal in every respect. Patient failed to return after this first visit, and no further notes of the case were made.

CASE 3.—Emily M., aged twenty-two, single, came to the Infirmary October 28, 1892, with the following history: Yesterday morning she was "dazed" in front of her right eye, and she could not see clearly, then a black spot appeared in front of this eye, and remained. Her vision had previously always been good. When seen, patient was in the midst of her menstrual period, which had lasted two weeks, longer in duration and with greater loss of blood than before. There had been no headache. There

was a large central scotoma, and patient counted fingers excentrically outwards. The ophthalmoscope showed emmetropic refraction; there was a fresh arterial hæmorrhage above the papilla, and equal to it in extent. The disc was congested, and its outlines hazy. Patient was taken into the Infirmary, and put to bed. Dry cups were applied to temple and back of ear.

November 28. — The hæmorrhage had largely disappeared. There was a circumscribed retinal separation below the disc, and not extending within two diameters of it, to the nerve. Corresponding to this there was upward visual-field defect. Vision .2.

December 29. — Having in the meantime returned to service, patient reported that she had been able to read with this eye. The vision was normal, and neither the hæmorrhage nor the retinal separation was demonstrable. No visual field defect could be mapped out.

CASE 4, taken from my private case-book.—Patient, Mrs. L. R., aged thirty-three, came to me January 25, 1893. For the last few days during her menstrual period, she has had headache extending from back of the head to her left eye. This occurred especially in the morning, and disappeared after drinking a cup of coffee. There was no nausea, no dizziness. Each eye showed hyperopic astigmatism and vision normal.

February 1. — Patient complained of a cloud before the left eye. There was moderate mydriasis of this eye, but both pupils responded promptly to light. The vision of the left eye was now .2, and could not be improved by glass. The vision of the right eye normal. There was a scotoma above point of central fixation.

The ophthalmoscope showed a neuro-retinitis. The optic papilla (in

the inverted image) showed a recent hæmorrhage at the nerve sheath and infiltration of the retina corresponding in extent to the diameter of the papilla toward the macula. There were some vitreous opacities.

Dry cups were applied back of left ear; mercurial inunctions and iodide of potash were ordered.

February 6.—The vitreous opacities were less; vision .4.

February 24.—The scotoma was diminished in extent; vision .6. The evidence of hæmorrhage at the nerve disappearing; outlines of disc more clear.

March 10.—Vision 1 (?).

March 23. — Catamenia present. Patient thinks her vision again less clear. While central vision is still normal or nearly so, the scotoma was of slightly greater extent. The ophthalmoscope showed no advance in the retinal process. The mydriasis of the left eye has disappeared. (*New York Eye and Ear Infirmary Reports*, 1894.)

STERILITY IN THE FEMALE. By ROBERT BELL, M. D.

For some years past the subject of sterility in the female has almost daily been forced upon my attention, and as I consider this in the majority of cases to be a curable affection, I make this my excuse for laying the following observations before my professional brethren. I may at once proceed to observe that I consider the one great factor of sterility to consist in a diseased condition of the endometrium. This may be due to various causes, stenosis, catarrh, hydrostatic congestion due to a defective heart action, or some other vascular derangement induced by obstinate constipation on the other hand, or a flexion of the organ on the other; certainly it is always aggravated by

one or both of the latter when these exist. Stenosis, as well as retroflexion and antelexion and prolapsus, is credited with many evil consequences, among which may be noted dysmenorrhœa, menorrhagia, dyspareunia, irritability of the bladder, painful defecation, muco-purulent catarrh, and almost invariably a depressed and irritable condition of the nervous system. These various pathological conditions would not, however, coexist were the endometrium in a healthy condition; to my mind, we are not sufficiently alive to the fact that not only is endometritis proceeding to metritis a most pregnant cause of the various affections among which I include displacements of the uterus, but by virtue of the continuity of tissue it gives rise to disease of the tubes and ovaries also. Take stenosis of the cervical canal, for example; in nine cases out of ten it is due to a hypertrophic condition of the mucous membrane consequent upon chronic hyperæmia, and we will find in such circumstances, if the condition has existed for any length of time, that the canal of the uterus is in the very opposite condition,—in fact, that beyond the contraction at the os a bagginess of the organ obtains. Such being the case, it is needless for me to remark that forcible dilatation without any other treatment can hardly prove other than injurious. If, however, stenosis is really the primary affection, it does not necessarily imply sterility or even dysmenorrhœa if the upper reaches of the endometrium are healthy, and for this reason, that the spermatozoa can make their way through as narrow a canal as a fluid can escape by, and blood if not coagulated can find its way through a channel of very minute calibre as rapidly as it is thrown off in the process of menstruation. This statement can readily be proved by noting instances where dysmenorrhœa grad-

ually comes on years after puberty, and where it is beyond doubt that the calibre of the os has not altered in the least degree. The cause of dysmenorrhœa in these circumstances is due to unhealthy condition arising within the uterus, and it is well-known that if blood comes in contact with tissue, be it ever so slightly inflamed, this acts to a certain extent upon the blood and alters its character. Its fluidity is thereby decreased, and hence the distress which so frequently accompanies stenosis, because coagula have to be forced through the contracted channel by uterine action, so that at each period the irritation increases till well-marked endometritis is the result. When this condition is brought into existence it does not confine itself to the uterine canal, but spreads by continuity of tissue into the Fallopian tubes, so that salpingitis is liable to coexist. Now just as endometritis reduces the calibre of the cervical canal, so does that of the Fallopian tubes become lessened. Especially does this occur at the outlet into the uterus, where the lining membrane of that organ, in consequence of its hypertrophied condition, tends to occlude the orifice. In this way hydro- and pyo-salpinx frequently originate.

I have frequently demonstrated that displacements of the uterus are invariably dependent upon a flaccid condition of its walls, and not so much, as is generally believed, upon a lack of support on the part of the uterine ligaments. It will therefore be unnecessary to notice them at this juncture in connection with the subject under discussion, though they are frequently referred to as causes of sterility. This is a hypothesis, however, I do not feel inclined to support. To my mind the one great factor of sterility is endometritis, and in this I include endocervicitis.

Not so very long ago it was ac-

cepted as an axiom that if a woman had ever been the subject of inflammation of the womb, she would never become pregnant. Now, however, it is beyond question that this is false doctrine. I have met with frequent instances of women who have been the victims of gonorrhœal endometritis bearing children after that was removed; and, with regard to simple endometritis, I could detail numberless instances of pregnancy occurring after its removal.

Endocervicitis may certainly *per se* be the cause of sterility, and doubtless occasionally is; but it is so rarely disassociated with a similar condition of the endometrium, and endometritis is never present without endocervicitis being coexistent, that it is quite unnecessary to consider them individually in relation to this subject.

How, then, it may be asked, does endometritis act as a factor in producing sterility? And why do physicians hold that the chances of a woman becoming a mother are lessened as years advance if pregnancy does not take place during the earlier period of married life? If we examine the discharge which is secreted so abundantly in endometritis, we shall find that it frequently consists of muco-purulent fluid of an acrid nature. The character of this fluid is so irritating that in its passage over the vaginal portion of the cervix it denudes it of its mucous surface, giving rise to erosion and papillary ulceration, and not unfrequently to vaginitis as well. The effects of its acidity being so injurious to the mucous surface over which it passes, can it be doubted that it will have a destructive effect upon the spermatozoa when they come in contact with it? Though this were not actually the case, however, the disorganization of the endometrium produced by it would cer-

tainly deprive that membrane of the power of affording a proper nidus for the ovum, even if the latter were to become impregnated.

If pregnancy does not follow marriage within a reasonable time, there must in the majority of cases be present some faulty condition of the generative organs of the female; this is the only deduction I can draw from the dictum already quoted, that the chances of a woman becoming a mother grow less as years advance after marriage.

In the first place let us consider what is the probable cause of sterility in such a case. There certainly may be stenosis, but that would not prevent impregnation, for the cogent reason that it could not act as a barrier to the spermatozoa gaining entrance to the cavity of the uterus,—that is to say, if the canal is sufficiently patent to permit the menses to escape. If, therefore, there is stenosis, without pain at menstruation, it can safely be inferred that no disease of the endometrium is present, and therefore no mechanical hindrance to conception. Again, flexions are frequently accredited with being factors of sterility. This, however, is only due to the fact that they indicate an unhealthy condition of the uterine lining membrane and walls; in short, they are only accessory conditions to and dependent upon the one prime factor of sterility,—viz., endometritis.

We know that not unfrequently unmarried women are the victims of this disease, and though in many instances it may not be sufficiently severe to interfere very much with the general health before marriage, the case becomes very much altered after that event. As time goes on, the diseased condition does not tend to diminish, but to increase, in consequence of the greater excitement the

organ undergoes. The unhealthy condition which at first was trifling, becomes in consequence more and more pronounced. It is little wonder, therefore, if sterility is persistent. If, however, the endometrium by judicious treatment is restored to its normal condition, I have no hesitation in affirming that it matters not how long after marriage it is accomplished, the most powerful as well as the most frequent barrier to conception will have been removed. In speaking thus I am not hazarding statements which I cannot bring forward an abundance of statistics to support; therefore I have no hesitation in placing them before the profession for acceptance. Many a miserable woman goes through life under the impression that she is incapable of becoming a mother, while in reality the fault lies in a curable affection of the uterus. Many women have only one child, others two, and so on; these cannot surely be said to be sterile, yet they are *pro tem* quite as unable to bear children as the so-called barren woman. In instances the cause is the same.

One is frequently called upon by women who have not borne children for a variable number of years, and yet their ages do not preclude this. Moreover, they will tell you their health has never been so good as it was wont to be since their last pregnancy, and then you will elicit from them subjective symptoms which will force you to the conclusion that the uterus is in an unhealthy condition. When this is removed, in all probability another epoch of childbearing will be inaugurated. Such at least has been my experience.

It will frequently be discovered that when stenosis of the cervical canal exists the cavity of the uterus is dilated and gives the sensation of bagginess when the sound is introduced. In such circumstances the

uterine walls will be found to be flabby, and a flexion, probably backwards, will speedily ensue if the tone of the organ be not forthwith restored. It is obvious that in such circumstances the stenosis is not the stumbling-block to impregnation, but, on the other hand, the acrid secretion from the endometrium is both an aggravation of the stenosis and the destructive power which acts upon the spermatozoa.

It must also be noted that endocervicitis may exist for a time without the endometrium being also involved, but sooner or later, either by extension of the inflammation or by the repeated monthly efforts of the uterine walls necessary to propel the menses through the narrow channel, or both combined, the endometrium must of necessity become involved.

The more extensive my experience the firmer becomes my conviction that endometritis is the one great cause of sterility, and not only of sterility but of flexions and oöphoritis also. This being the case, the treatment of these affections is not difficult to conduct, and leads to a happy termination of the disease. To carry this out successfully, it is necessary to insist that during the process the sexual organs should be kept quiescent.

Recovery will be very much accentuated if the treatment be inaugurated by curetting the endometrium before the weekly or bi-weekly applications of iodized phenol to the canal are commenced, which should be supplemented by the introduction of a tampon saturated in the glycerin of alum and boracic acid solution. If this treatment be carried out thoroughly, I have no hesitation in predicting that the time occupied in procuring a satisfactory result will be very materially diminished. (*International Medical Magazine, Feb. 1895.*)

BOOK REVIEWS.

(All Exchanges and Books for Review should be sent to Dr. C. G. CUMSTON, 826 Beacon St., Boston.)

SCIENTIFIC LITERATURE. Messrs. J. B. Baillière et Fils have just published a new *General Catalogue of Scientific Books* relating to medicine, natural history, agriculture, physics and chemistry, forming a volume of 112 pages. The book contains a detailed description of over 5,000 works and an alphabetical table of contents.

The publishers will send a copy of this catalogue to any reader of the *ANNALS* who wishes one, by addressing Messrs. J. B. Baillière et Fils, 19 rue Hautefeuille, Paris, France.

ANTISEPSIS AND ANTISEPTICS. By CHARLES MILTON BUCHANAN, M. D., Professor of Chemistry, National University, Washington. The Terhune Company, publishers, 1895.

This is a practical little volume and contains much that is good. The list of antiseptic substances reviewed in its pages is really astonishing, so great is their number. Beginning with a good historical sketch of the subject of antiseptics, the writer treats the products of vital cellular and bacterial activity, infection, susceptibility, and immunity. Antiseptics are thoroughly written on regarding their relative value, their use and value in general medicine, surgery, gynecology and obstetrics, the book ending by a chapter on the essentials of antiseptics and asepsis. It is a good little manual and will be of use to the student and practitioner.

A SYSTEM OF SURGERY. By AMERICAN AUTHORS.

Messrs. Lea Brothers & Company are about to issue a *System of Surgery* which will be complete in four volumes, the first of which will be

issued this month, the others to follow at short intervals.

The importance of the system is easily estimated by the well-known names of the contributors, as Councilman, Nancrede, Warren, McBurney, Pilcher, Abbe, Polk, Lusk and many others.

This work is for sale by subscription only, at the price of \$6.00 cloth or \$7.00 leather per volume.

HYSTERECTOMIE ABDOMINALE, TECHNIQUE, CRITIQUE, RESULTATS. Par le DOCTEUR GENTILHOMME. Paris, 1894: George Caré, éditeur, 3 rue Racine.

Unquestionably more good works on gynecological subjects have come to us from France, in the last few years, than any other European country. Dr. Gentilhomme's book on abdominal hysterectomy is still another proof of this.

It is a complete monograph on the subject, and one well worth reading. In its pages the author describes the various methods and technique in a clear and very concise manner. A *résumé* of the contents is as follows: The first part is devoted to supra-vaginal amputation by the extra-peritoneal, intra-peritoneal and combined methods. The second part treats of total extirpation of the uterus by the vagino-abdominal and abdomino-vaginal operations and total extirpation. At the end of each operation the author gives an excellent criticism of the method. The chapter on statistics is most important, the work ending with the conclusions of the author. American surgeons are duly referred to, and Edebohls', Baldy's, Lanphear's methods are fully described. In closing we desire to congratulate Dr. Gentilhomme upon his excellent

monograph, and to recommend it heartily to the surgeon.

SUGGESTIVE THERAPEUTICS IN PSYCHOPATHIA SEXUALIS; WITH ESPECIAL REFERENCE TO CONTRARY SEXUAL INSTINCT. By DR. A. VON SCHRENCK-NOTZING (Munich). Authorized translation from the German by CHARLES GILBERT CHADDOCK, M. D., Professor of Diseases of the Nervous System, Marion-Sims College of Medicine, St. Louis; member of the American Medico-Psychological Association; Attending Neurologist to the Rebekah Hospital, St. Louis, Mo., etc., etc. One volume, royal octavo, 325 pages. Extra cloth, \$2.50 net; sheep, \$3.50 net. Sold only by subscription to the medical profession exclusively. Philadelphia: The F. A. Davis Co., publishers, 1914 and 1916 Cherry street.

This work may be considered as a mate to Von Kraft-Ebing's "Psychopathia Sexualis." The importance of the subject treated in these works cannot be too fully considered by the profession. As a contribution to medical literature the book stands without a rival in suggestive therapeutics.

It is most original in every respect, and the translator has written the book in a most readable manner.

Not only are Dr. Schrenk-Notzing's

theories to be found in its pages, but the entire subject and the work of other well-known physicians are carefully reviewed and studied. We are glad to see the English edition of this important volume, which will be found of utmost value to the student of psychology and the progressive physician.

ABDOMINAL TUMORS AND ABDOMINAL DROPSY IN WOMEN. By JAMES OLIVER, M. D., F. R. S., (Edin.), Physician to the Hospital for Women, London, etc. London, 1895: J. & A. Churchill, 11 New Burlington street, publishers.

This volume cannot be called a treatise on the subject of abdominal tumors in the female, but is rather an interesting collection of remarks on the pathological conditions on which the author writes, with reports of cases occurring in his practice. The greater part of the book is devoted to various gynæcological affections, although tumors of the stomach, bowel, liver, gall bladder, pancreas, spleen and kidney, are also considered in its pages. Abdominal dropsy is most interestingly dealt with, especially in connection with various cysts.

As a strictly clinical work it is most excellent, and the reader will find much to interest him in its pages.

SOCIETY ANNOUNCEMENTS.

Congress of Gynæcology at Bordeaux will take place from August 12 to 16, 1895. It has been organized by the Obstetrical and Pædiatrical Society of Bordeaux.

Presidents. — Gynæcology: Prof. Le Dentu; Obstetrics: Prof. Tarnier; Pædiatry: Prof. Lannelongue.

The International Congress of Pædiatry will take place next year at Florence, Italy.

The Obstetrical Society of France will hold its third session at Paris, from the 18th to the 20th of April, 1895.

ANNALS

—OF—

GYNÆCOLOGY AND PÆDIATRY.

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ORIGINAL COMMUNICATIONS.

Benign Tumors of the Breast.

A CLINICAL LECTURE DELIVERED AT THE SUFFOLK DISPENSARY ON MARCH
26, 1895, BY CHARLES GREENE CUMSTON B. M. S., M. D.,

*Instructor in Clinical Gynæcology, Tufts' College; Member of the Société
Française d'Electrothérapie, etc.*

GENTLEMEN:—The subject of non-malignant tumors of the breast is an important one, and I propose to devote a little time to this question today, leaving aside the malignant growths so frequently met with in this gland, which I shall take up at another time.

Of the purely benign neoplasms of the mammary gland, there are three, viz.: Fibroma, adenoma and cysts. In this lecture I do not intend, nor could I, in the time allowed, discuss the entire subject; but I will limit myself to certain important points on pathological anatomy, ætiology, and treatment that I feel sure will be of value to you.

Without any doubt fibroma are by far the most frequent benign growths

that are met with in the breast. This fact is amply demonstrated by Labbé and Coyne, who found that out of 34 cases of tumors of the mammary gland, 18 were pure fibroids; 3 were cysts by retention of products produced by hyperplasia of the connective tissue; 8 were sarcoma, 4 of which had fibroma as a starting point, and they say that sarcoma is, at its origin, a fibroid; but I believe that this statement is slightly amiss in some cases, as I have seen sarcoma develop in subjects in whom no growth had previously been found. Fibroid tumors of the breast occur between the age of twenty and forty, in other words during the active sexual period of woman. Billroth and Birkett claim that this neoplasm

never appears before puberty, nor after the age of forty. The cases that have come to my notice have been from eighteen to thirty years of age, although they certainly do occur later in life, though this may be due to the fact that they were not noticed by the patient, especially so if the nucleus of the neoplasm is seated in the deep part of the gland.

Some writers claim that the unmarried state is more favorable to the development of these growths, while others deny this statement, claiming that married life produces them. It is infrequent to find both breasts involved at the same time, and I have never been able to discover that the left breast was any more subject to the affection than the right, and *vice versa*.

An important point in the ætiology of fibroids of the breast is put forth by Labbé and Coyne. They say that menstruation may be related to their formation in certain cases, and is sufficient to explain the development of the growth.

Now, gentlemen, if you will consider this fact you will see that this is about the only cause capable of explaining the development of multiple fibroma of the breast in women who have never had abscess of that gland or who are nulliparæ. If you carefully question these patients regarding their breasts during the menstrual periods, they will be pretty certain to tell you that they often are subject to a greater tension of the organ, with redness, heat, swelling and pain,—symptoms which indicate a severe congestion, and even inflammation of the gland. I consider this

as a real *menstrual mastitis* in the first stage of development, and which, by the histological changes that it produces, will ultimately result in fibrous nuclei.

You are all aware of the considerable vascular supply nourishing the mammary gland, and when these vessels become dilated by the genital reflex that I have just mentioned, an active diapedesis of leucocytes takes place; or, if Cohnheim's theory is not accepted, a proliferation of connective cells in the connective tissue surrounding the acini is set up, and it is to this condition that corresponds the tumefaction, redness, etc., with an indurated and lobulated condition of the mamma.

A tumefaction of the axillary glands may be found, but this symptom must not be confounded with the aberrant portion of the mammary gland, which is situated under the posterior border of the pectoralis major, when congestion is present.

These symptoms of which I have just spoken disappear with the menses, but in time this recurring congestion will ultimately result in the presence of nodosities in the breast, because the neoplastic elements are transformed into connective and fibrous tissue, thus forming a fibroid tumor. During the first few years, at the time of the menses, one or both breasts are enlarged in a diffused manner, and after a certain time you will be able to detect a solitary nodule by palpation. This nodule increases in size, and it is then that the patient will seek your advice.

That menstruation has a very con-

siderable importance in the ætiology of fibroids of the mammary gland, by producing localized interstitial chronic mastitis there appears to me little doubt, and for that matter chronic mastitis is the first step in the formation of fibroma.

For Kennedy, a fibroid growth, even though it may be solitary, is simply a circumscribed interstitial chronic mastitis in the highest degree of development, which, by becoming encysted, no longer communicates with the surrounding tissues, thus forming an isolated neoplasm and developing as such. König states that fibroids simply represent the last stage of this type of mastitis, and which is overlooked and not understood by surgeons as it should be.

I feel sure, gentlemen, that if more attention were given to this type of interstitial inflammation the appearance of a number of neoplasms in apparently healthy mammæ, such as simple or multiple cysts, fibroids, etc., could be easily accounted for, if we may judge from analyses of reported cases. At the commencement of the affection, round, generally hard and painful nodosities are found in one or both breasts, which, if treated properly, would result in cure. After an insidious period extending over a certain lapse of time, these attacks of chronic mastitis may take on a rapid course, the disease developing after a few successive attacks, and often simultaneously in both glands. The patient may not be aware of the existence of the nodosities, which are first discovered when the patient is examined.

The menstrual periods especially

are the times at which these nodosities develop. The breast becomes painful and a more or less watery liquid may be secreted; this liquid sometimes resembles milk in appearance. Tumefaction of the lymphatic glands may occur quite often.

Now, if you examine a microscopical section of one of these nodosities, you will see the morbid process consists of all stages of connective tissue formation, the most recent being an infiltration of embryonic cells surrounding the acini, while the most advanced stage is simply a formation of adult connective tissue. The acini may be found compressed and atrophied by the infiltration of round cells, while their epithelium may undergo granulo-fatty degeneration.

Besides the cases, in which the inflammatory process results in the formation of a fibroma, there are others in which cysts, varying in size and number, develop at the same time as the fibroma; the cysts may also be found alone. These cysts vary in size from a millet seed to that of a walnut; they are round, very hard, and when pricked with a needle they send forth various colored liquids with considerable force. It has been demonstrated by Labbé and Coyne that these cysts are formed by means of cystic cavities, gaps and spaces which are in their turn formed by means of the acini, and are to be found in fibroid tumors of the breast. The acini are drawn on in all directions by the development of perilobular connective tissue, and become greatly increased in size, while the excretory canals are effaced; in certain points obliterated and atrophied

by the process. The epithelium of the acini tumifies and proliferates by the continued irritation of the process. The acini become distended by their secretion, which is perhaps increased in quantity and cannot find exit.

The pressure exercised by the liquid on the periphery may cause degeneration of the epithelium, which becomes detached and floats in the liquid, and is found in an undistinguishable form, as the cells have been transformed by a granulo-fatty degeneration, which makes them most difficult to recognize.

The formation of cysts may be general or localized to some zones, being above all situated in the excretory canals. This pathological condition, by which the cysts are formed, certainly appears to apply to the formation of cystic cavities in certain cases of Reclus' disease, as is pointed out by Jacobs. In fact, the disease described by Reclus, presents the above mentioned histological characters according to Malassez, Brissand and Cornil.

I have only spoken of chronic mastitis consecutive to the menses, as an inflammatory influence producing fibroma, but this neoplasm may be determined by an abscess of the breast. In infectious mammitis, the microbe, an important element, intervenes. The micro-organisms produce a more active proliferation of connective tissue cells, which are destroyed or produce pus. If they resist, they undergo a rapid metamorphosis into connective tissue.

Now the only difference between the infectious and menstrual mastitis, regarding fibroid formation, is, that

in the first variety the fibrous nodosities appear rapidly. They are hard, multiple nuclei, generally seated in both breasts.

Velpeau laid great importance to traumatism as an ætiological factor in fibroids tumors of the breast, by producing a localized focus of mammitis, resulting in the formation of fibrous elements. This ætiology is accepted by a large number of surgeons, but I think that it is only applicable to completely isolated fibroid neoplasms, appearing in a breast that has been healthy up to the time the traumatism was received; while chronic mastitis produces multiple fibroma in breasts that are painful at the menses.

When the patient seeks medical aid, the growth has usually attained the dimensions of a walnut or even more. By palpation a hard lump is felt as in the case I now show you, and you will find that it is movable in the deep structures and does not adhere to the skin. By pressing the growth there is no pain.

Pain does however occur in these cases, but only when the nerve terminations are pressed upon or bound up in fibrous tissue, a state of affairs commonly met with in multiple fibroma.

Another element which favors pain, is when we have to do with a nervous patient. They are very subject to it. In syphilitics, and especially patients with a malarial diathesis, it is well known that neuralgia often is present, consequently patients suffering from painful fibroma of the breast should be particularly questioned regarding their antecedents, as

the pain may be made to disappear under well directed treatment.

On the other hand, pain in the breasts is often a reflex symptom of some uterine affection, which, if the latter be properly diagnosed and treated, will result in a disappearance of the pain in the mammary gland.

The differential diagnosis between fibroma and scirrhus of the breast is often most difficult. If pain be present it generally points to a non-malignant neoplasm. The pain in scirrhus appears at a comparatively late stage of the affection, when the glands are invaded and by their increased dimensions compress the nerves, while in fibroma even of small size, pain may be present and quite severe.

Fibroma develop slowly, remain stationary for several years, and then suddenly enlarge. Their transformation into a malignant neoplasm has been amply demonstrated, and no doubt is to be entertained as to this fact.

The treatment of fibroma of the breast is purely surgical, for the simple reason that later the growth may become malignant. Of course, if you are called to treat a mastitis of any variety, you must bear in mind the probable ultimate outcome of this inflammatory lesion, and use such medical means as are of some real and rational value. I would suggest iodide of potassium internally, with mercurial and iodide frictions externally, or an ointment of ichthyol. Compression is an excellent means, and when well applied gives very excellent results. Another treatment, due to Dr. D. Mollière of

Lyons, consists of an application to the breast of an ointment containing pilocarpin, which is then covered by absorbent cotton and the whole enveloped by thin rubber sheeting.

There are two operations which I most favor in cases of non-malignant tumors of the breast, one due to Tripier of Lyons, the other to Tharras.

I said I favored them in these cases, and my reason for so doing is simply because they produce only very little disfigurement of the organ, a most important element to my mind, because the patients on whom you will operate are young women, and it is most essential to preserve their appearance to the highest possible degree.

As to the instruments necessary for performing extirpation of these growths, the fewer and simpler they are the better. One metal handle knife, with a narrow blade about an inch long, a dozen hæmostatic forceps, a Kocher's director, two four-sharped pronged retractors, needle-holder, scissors, silk, and large half-curved needles will be found quite sufficient. It is needless for me to enter into the details of antisepsis and asepsis of your hands, instruments, etc., as well as the toilette of the patient and operating table, as you all know the importance of this question quite sufficiently.

When the tumor is encysted, well limited and not adherent to the gland, enucleation should be performed. If on the other hand the neoplasm is cystic, diffused, without distinct limits, or is intimately involved in a *large portion* of the glandular structure,

you will then be obliged to resort to partial amputation of the breast. As fibroma of the breast are not likely to recur, and as they are more or less well limited, enucleation can usually be performed, and I should advise you to do the operations that I will now describe to you, for the reasons I have already given.

The first is Tripier's operation. After thorough antiseptic cleansing of the field of operation, the armpits having been shaved, you make an incision over the growth. This incision should be made from above downwards, and from behind forwards, carefully following the external border of the pectoralis major. The length of the wound varies, but should not be carried far enough to reach the areola.

Incising the skin and subcutaneous cellular tissue, ligating all vessels layer by layer as you go along, for I can assure that a clean wound with all bleeding stopped is the only proper method of operating, you cut down upon the neoplasm, which should be divided in two parts.

Now, both sections of the tumor are separately removed with the sclerosed parts of the gland, the portion removed having the shape of a triangle, its base being at the periphery of the gland, the apex near the nipple. The size of the segment removed depends upon the extent of the lesions.

When hæmostasis is perfect, a drainage tube is inserted under the gland and is brought out through a counter opening, made in the fold formed by the junction of the breast, with the thorax on the outer side.

This drainage tube is intended to insure the flow of liquids which may exist in the submammary tissue, and when in place the gland is sutured by three points; the first and third are at the extremities of the wound, the second in the middle; this forms the *deep supporting suture*. The sutures are introduced from without inwards, entering the surface of section of the gland. A second drainage tube is now inserted at right angles with the first; it is placed in the gland, its upper end directed towards the axilla, emerging from the upper angle of the incision. The cutaneous incision is then closed by interrupted sutures or by the continued suture, as I am in the habit of employing. Nothing now remains but to disinfect the region, inspect the drains to see that they are all right, and apply a good sublimated gauze dressing and bandage.

By this method of suturing the gland, the crater-like depression so often seen after other operations is done away with. A breast, which before operation may have been soft and pendant, becomes prominent and firmer after operation, this result being obtained simply because no cavity is allowed to remain in the gland. Tripier's operation is particularly indicated in tumors situated in the supero-external region of the breast. For neoplasms occupying the lower half of the breast, enucleation should be performed by Tharras operation, which consists in incising the skin in the furrow separating the organ from the thorax. The breast is raised up, the sub-mammary bursa incised, and the tumor attacked on its deep sur-

face. This operation was perfected by Tripier, who, by suturing the gland as in his operation, obtained a superior result. Tumors situated high up are also best removed by this operation.

There are cases that demand amputation of the breast, and where it would be impossible to perform a radical operation by the above mentioned methods, but as this subject is fully treated in all text-books on

surgery, I particularly refer you to them.

The young woman whose left breast you have examined, presents a simple fibroid tumor the size of a hen's egg, resulting from abscess of the breast after her confinement two years ago. As she is rather anemic, I shall build her up a trifle with suitable tonics, and when she feels stronger I shall remove the neoplasm by Tripier's operation.

Ectopic Pregnancy.*

AUGUSTIN H. GOELET, M. D.,

NEW YORK.

Mr. PRESIDENT AND GENTLEMEN:—In deciding upon the course to be pursued when the diagnosis of ectopic gestation has been made, there are three points which must be considered: First, whether the tube is still intact or unruptured and the stage of the pregnancy; second, if rupture has occurred, whether it is between the folds of the broad ligament or extra-peritoneal; third, whether it is intra-peritoneal.

Operative interference should never be withheld in the presence of rational indications for its necessity, but it is manifestly incorrect for the advocates of primary cœliotomy to contend that the existence of tubal pregnancy is an indication for immediate operation and that rupture

is always imminent. It is true that rupture has occurred as early as the fourth or fifth week, but according to Winckle, whose experience has been exceptionally large, it occurs most frequently between the third and fourth months. According to Tait also it occurs more frequently from the twelfth to the thirteenth week.

When rupture with hæmorrhage occurs between the folds of the broad ligament immediate operative interference is not demanded or indicated, as it is comparatively harmless and may be left to nature, or absorption may be promoted by the use of electricity if the growth of the foetus has been arrested at a sufficiently early period. Even Tait insists upon the comparative harmlessness of hæmorrhage in this location following rupture. If suppuration occurs later the whole mass can be more satisfactorily

*Remarks made by invitation before the King's County Medical Association, Brooklyn, in the discussion of Dr. L. Grant Baldwin's paper on "Ectopic Pregnancy," April 9, 1896.

evacuated through the vagina than by cœliotomy. It is more easily reached by this route and the operation involves less shock and less risk to the patient.

Even where intra-peritoneal rupture occurs, the records of cœliotomy show that hæmorrhage is often found to be moderate in amount and not in itself sufficient to furnish occasion for immediate surgical interference (Lusk in *Clinical Gynæcology*, page 752).

The patient should be closely watched and if the hæmorrhage is uncontrollable cœliotomy should, of course, be resorted to at once and without delay. If, however, as is often the case, it is limited in amount, it may be let alone, and if the patient be kept absolutely quiet the clot will be surrounded by lymph as a result of the inflammatory action which supervenes, and it is eventually shut off from the general peritoneal cavity. Subsequently if operative interference becomes necessary the vaginal route will be safer and more satisfactory than opening the abdomen. It is safer to evacuate the clot at a later period than to do so immediately, because by waiting the ruptured blood vessels are allowed to close and we would no longer have hæmorrhage to contend with. It has, no doubt, been the experience of many of you that these cases have been conducted to a successful termination in this manner. In this connection, a case which I reported in the *Medical Record* about 1880 will be interesting, as showing that a favorable termination may result in removal by this route, even

when suppuration has occurred. A patient came under my observation, who was supposed to be suffering from a hæmatocele of considerable size. For some unknown reason suppuration occurred and it was evacuated through the vagina, and the diagnosis was made clear. It proved to be an ectopic gestation, the four months fœtus being removed in a state of decomposition. Drainage was maintained through the vagina and the patient made good recovery, remained in excellent health, and bore several children afterwards.

I am strongly opposed to operative interference for all cases of pelvic hæmorrhage, that is, cœliotomy for these conditions, though this course has some strong advocates, who believe that it is nearly always due to ruptured tubal pregnancy. The folly of such a course, which, it must be admitted, submits the patient to needless risk, is frequently illustrated. In this connection, I recall a case upon which I operated ten or eleven years ago, which was reported in the *ANNALS OF GYNÆCOLOGY*.

A diagnosis of fibro-cystic tumor was made and confirmed by the late Dr. G. C. Lee, the patient coming to me from a distant part of this State and giving an imperfect and unsatisfactory history. The operation revealed a mistake in the diagnosis, the tumor proving to be a very large hæmatoma which projected high up into the peritoneal cavity. The case terminated favorably after evacuation through the abdomen and drainage through the vagina, but the operation would not have been performed if a

correct diagnosis could have been made previously, and a favorable termination would have been reached earlier and more satisfactorily than by interference surgically. In this case there was no evidence whatever that the hæmorrhage had been due to ruptured tubal pregnancy.

In considering the question of dealing with tubal pregnancy before rupture occurs, the question which suggests itself is, why submit the patient to a needless and dangerous operation when a safer and more rational course is open to us? It is urged that the necessity for operative interference in this stage is the danger attending rupture. The death of the fœtus, which can certainly be accomplished by electricity, removes this danger. Besides it has been shown that the danger following rupture has been exaggerated; that extra-peritoneal rupture is comparatively harmless, and that the hæmorrhage following intra-peritoneal rupture is often moderate in amount and not in itself sufficient to demand surgical interference. Of course you understand that I would not advocate withholding operation where the hæmorrhage is serious and uncontrollable.

It has been urged against electricity that its use may produce rupture, but this is manifestly unwarranted, since it has never occurred in any of the large number of cases where it has been employed. Likewise the objection that the dead fœtus may become a source of danger to the mother can be disregarded in the

face of abundant evidence to the contrary. Theoretical objections of this nature will hardly weigh against statistical evidence. The truth must be admitted. No deaths have occurred which could be attributed to the use of electricity in ectopic gestation, and no evil results have followed. On the contrary the health of the patients has been good for periods varying from one to eight years afterwards. The fatal cases reported, four in number, have been shown to be due to other causes and in no way attributable to electricity.

On the other hand the advocates of primary cœliotomy must admit that there is a mortality following this operation, even with expert operators, to say nothing of the risk of the occurrence of ventral hernia and the disfigurement of the abdominal scar, both of which are now being urged as advantages of vaginal hysterectomy as opposed to abdominal hysterectomy.

Upon the evidence presented, therefore, the use of electricity in unruptured tubal pregnancy, prior to three or three and a half months, is the most rational proceeding which we can adopt. In cases also where the diagnosis of tubal pregnancy is doubtful, electricity should also be used in preference to pursuing a waiting policy to have the diagnosis cleared up, since there is no condition likely to be mistaken for it which could in the least be unfavorably influenced by its use.

Hysterectomy for Cancer.*

E. W. CUSHING, M. D.,

BOSTON.

I DO not propose to take up the the time of the Association with a long review of the different methods for doing hysterectomy for cancer, but there are some points which have come up which I think worthy of discussion. I presume it is agreed that vaginal hysterectomy for cancer has come to stay, and that it is the proper thing to do as soon as cancer is discovered. High amputation has gone by. It was just as hard to do as, and more dangerous than, vaginal hysterectomy. None of us would do better than Schroeder, and he lost 8 per cent. of his cases of high amputation. The question comes up, if we have to do a vaginal hysterectomy, how are we going to do it? Recently Pratt's method of doing vaginal hysterectomy has been proposed, that is, without tying the vessels, the essence of the process being to keep just so far into the uterine tissue, leaving enough of it to contract and stop the mouths of the uterine arteries that may permeate the uterus. As far as this goes it is all wrong. The first object is to keep as far away from the cancer as we can without cutting into the ureter. Consequently there comes the question of the choice of methods of operation from below, whether to use clamps or ligatures. I began with clamps. I had good results, twenty-one cases, with nine-

teen recoveries. There is a certain disadvantage in the use of clamps, in that they are uncomfortable to our patients. They excoriate the vulva and prevent accurate closure of the vaginal wound. They are liable to break in putting on. I have had one break twelve hours after operation, and it made the patient very nervous. For a man who is doing a good deal of work it becomes a question of expense. You have to use four to six or eight clamps, which have to stay in the vagina, usually surrounded with iodoform gauze for forty-eight hours, spoiling the polish on your instruments, so that they have to be repaired and repolished. Therefore, in my judgment if the ligature is equally safe and advantageous in other respects, it should be preferred.

In classifying the operations of vaginal hysterectomy I would divide them first into the hard and easy; for the easy operation there is no good in using clamps. The operation can be done without difficulty and without practically any danger. There is no reaction and the patients recover. The work can be well done with cat-gut ligatures, if any one prefers cat-gut, or with silk; then we can secure accurate coaptation of the vaginal wound. I see no reason why any of you should use a clamp on any easy case of abdominal hysterectomy, but on a hard case it is not always possible to get along with a ligature. The

*Read at the meeting of the American Association of Obstetricians and Gynecologists at Toronto, 1894.

vagina is narrow, the uterus large, tubes adherent, and broad ligaments thickened. The question is, how far it is desirable in difficult cases to go by the vaginal route by the use of clamps and when to operate through the abdomen. There are difficulties in the way of the latter operation. The first difficulty is the increased danger of soiling the abdominal cavity and setting up sepsis. The second is increased shock. A very eminent operator in this country told me some months ago that he had entirely given up vaginal hysterectomy and had substituted abdominal hysterectomy for all cases of cancer. I had the case of a Spanish woman, a good deal reduced in strength, where it seemed it would be a difficult operation. I preferred the abdominal operation, and it was certainly quick and bloodless. I lifted the uterus out in twenty-three minutes from making the incision. It might have taken me twenty minutes more to finish the toilet and close the vagina and abdomen, and yet the patient died of shock. I do not believe that woman would have died of shock if I had removed the uterus from below. I desire to emphasize the fact that you cannot remove the uterus through the abdomen in my judgment with anything like the minimum amount of shock that occurs in removing it through the vagina. I throw that out as a hint for discussion. It is wonderful the small amount of shock we get where there is no hæmorrhage to speak of in removing the uterus from below, while there is considerable shock in doing the operation from above. The operation for re-

moving the uterus from above requires a higher degree of surgical precision, especially in the matter of technique, to avoid sepsis. It is an operation to be done only by those who have done twenty to fifty abdominal hysterectomies for fibroids before they begin on cancers. It is harder; the cervix is large; vascularity is increased; it is more difficult to control hæmorrhage, and more difficult to avoid the ureter. It is, therefore, not to be rashly adopted by any one who prefers to do it through the abdomen, unless the man be an abdominal surgeon of great experience. Many of these operations for cancer must necessarily be done by men of limited surgical experience. It is better for the average practitioner who can do some of the operations for cancer to do that one which he thinks best, and try to save the patient's life, than to let her die a certain death where he cannot send her to a surgeon.

Discussion.

Dr. J. D. GRIFFITH.—I would ask Dr. Cushing, with regard to the position of the Spanish woman, whether it was the Trendelenburg position or not?

Dr. CUSHING.—Yes. I think everybody will find it difficult to operate on a case of cancer by abdominal hysterectomy without the Trendelenburg position. I do not know how it would be safe for him to guard the peritoneal cavity against infection in any other way.

Dr. GEORGE F. HURLBERT.—I would like to have Dr. Cushing tell us those cases he would select for the

abdominal and those for vaginal hysterectomy. What are the conditions to decide that point?

Dr. CUSHING.—I should be inclined to select only such cases for the abdominal operation as would be very difficult to do by the vaginal method. For instance, I had this summer the case of a woman, sixty-three years of age, in which the vagina was small and the uterus as large as a cocoanut, filled with a sloughing, stinking, malignant, degenerating growth. There was no choice of operation in such a case. It had to come out. Where the uterus is large, the vagina small, and there are adhesions, apparently of the tubes, and the abdominal wall is not too thick; where there is no such weakness of the heart as to imply shock, the abdominal operation, in the hands of an expert with the patient in the Trendelenburg position, is to be preferred. There is no doubt about that.

Dr. J. D. GRIFFITH, of Kansas City.—The reason I spoke of the Trendelenburg position was this: I have recently lost two cases in abdominal and pelvic work that I thought could not have died from anything else than from it. In a series of twenty-four consecutive cases I have lost these two. They were not as desperate to deal with as some I had dealt with without the Trendelenburg position. I put myself in the Trendelenburg position for thirty minutes, and if any of you will try it for a short time, even without the assistance of the anæsthetic, you will find that it produce, marked shock. At the meeting of

the American Medical Association I called Dr. Marcy's attention to it and he said he had not thought of it, but that since I had spoken of it he was reminded of more than one case that had died after an operation, in which he could not account for the fatal issue. I have found by experience that the Trendelenburg position is an exceedingly disagreeable one, and one that is not easily recovered from. I did not fully recover from it in less than two and one-half hours.

Dr. GEORGE F. HULBERT, of St. Louis.—I asked Dr. Cushing a question in what cases we should elect the abdominal over the vaginal method, with a view of having as clear a conception as possible, and from the description given by Dr. Cushing it seems that the element to decide that point for him is his ability and the certainty with which the ligature can be applied effectively. It seems to me that if this is the condition of affairs, bearing in mind that we are endeavoring to place our ligatures as far from the uterus as possible, these cases are not suitable for operation at all. I doubt if a hysterectomy under these circumstances is of any value whatever, because it simply means that the neoplasm has got beyond any possibility of entire removal. If we cannot entirely, within a reasonable degree of certainty, remove the malignant tissue we certainly do not resort to the operation of extirpation. There are cases of malignant trouble in which the uterine body is large, and in which the surrounding tissue is not involved, but the disease still confined to the uterus itself. It

is purely a mechanical question in deciding between the two operations. If we have a uterus that is so large that we cannot with an ordinary effort extirpate it by the vaginal method, the case is suitable for an abdominal section. I believe that is the real solution of the problem. I certainly would not accept Dr. Cushing's idea if I am correct in quoting him.

Dr. CUSHING.—The difficulties of working from below, to which I referred, were not owing to cancerous invasion of the broad ligaments, but in bringing the uterus down, which may be cancerous and yet covered by inflammatory adhesions. By opening the abdomen you can see if the broad ligament is involved, and avoid the cause Dr. Hulbert refers to.

Dr. HULBERT.—In regard to the difficulties of the vaginal method contrasted with the comparative ease of the abdominal, I do not wish to be understood as calling it an easy operation. I think it is the most difficult operation that falls to the lot of the pelvic surgeon.

Dr. L. S. McMURTRY, of Louis-

ville.—This is a subject of practical interest. The operative technique in vaginal hysterectomy has been brought to a high degree of perfection. The operation is now done with uniformly good results as to the operation itself. It is a difficult operation to perform. The recurrence is in proportion to the stage of the disease and its thorough extirpation. Late operations here do harm by the discredit thrown upon good surgery. The best immediate and ultimate results obtain in cases where the family physician recommends operation as soon as the first symptoms are made known.

Dr. CUSHING.—In regard to the Trendelenburg position I acknowledge the danger, especially if the patient is let down suddenly. We should let them down slowly. I wish also to say that if you have to do with the removal of a cancer through the abdomen the increased danger of infection without the Trendelenburg position is sufficient to justify the use of it, even if there is some increased danger of shock in letting the patient down.

Injuries to the Pelvic Floor.*

F. B. DORSEY, M. D.,

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I DESIRE to call attention to a few reasons why there are so many injuries to the pelvic floor, due to parturition:

*Read before the Tri-State Medical Society, at St. Louis, Mo., April 2, 1895.

Insufficient knowledge of the anatomy of the parturient channel, the pelvic diameters, plans of the pelvis, the axis of the channel, etc.; lack of anatomical knowledge of the foetal head, or other presenting parts, and

the relation sustained between them and the pelvis during parturition.

Often inability on the part of the physician to diagnose the presentation, and utter inability to diagnose the position in the majority of cases. In other cases failure to differentiate between a normal and abnormal condition, until hours of fruitless labor or exhaustion have ensued, and even then unable to differentiate between those cases in which forceps are indicated or Cæsarean section should be performed.

Under such circumstances, if the forceps are applied, lack of anatomical knowledge means injury to the soft parts or craniotomy or both.

As the result of long labors, from whatever cause, we have congestion, loss of tone and destruction of the soft parts.

We will avert this condition, in a great measure, by a thorough knowledge of the anatomy of the parturient passage and foetal head and ability to early diagnose conditions existing. This means not only the anatomical landmarks in connection with each, but we must understand the relations existing between the pelvis (or parturient channel) and the foetal head. This means a knowledge of the mechanism of labor, under the various presentations and their positions. Acquiring ability to diagnose early not only the presentation but the relative size of the foetal head and pelvis as well as the position in the given case, thereby being able to correct conditions tending to delay.

In prolonged first stages of labor, morphine hypodermically or chloral and morphine may be used to produce

sleep, which not only prevents exhaustion, but promotes dilatation, and the timely application of the forceps and delivery often saves destruction to the soft parts.

We recognize that the application of the forceps is painless, and if proper precautions are taken, no danger attends the extraction of the child. Forceps, if properly used, act as a means of promoting flexion and rotation. The forceps act not only in this capacity, but as compressors, lessening the diameter of the foetal head from one half to one inch, and necessitating no injury to the head, providing the proper kind of forceps are used and they are properly adjusted and traction made in the axis of the parturient channel. Nothing but force exerted by the arms is necessary, for the old method of swaying from right to left does injury.

The proper protection of the pelvic floor is of great importance. We avert its laceration oft times by judicious protection, which is done, not by direct pressure against the already thinned tissues, but by placing the thumb and finger near the ischial tuberosities as the head emerges and crowd it well against the archway.

One of the best protections afforded the pelvic floor is the recognition of complications and conditions that tend to prolong labor and then the immediate correction and the early delivery of the foetus.

I have seen as many, if not more, lacerations existing in non-instrumental deliveries as in those in which instruments were used.

It is not uncommon to hear physicians say that through many years

of experience that lacerations do not occur in their practice.

I do not believe the man lives who has had an obstetrical practice of any extent but who has had cases of lacerated perinei in his practice. I will go further and say that a large percentage of all child-bearing women are lacerated to a greater or less extent.

It is not always possible to recognize the existence of a tear by the sense of touch, and therefore ocular inspection should be instituted before we can consciously say that a woman is in proper condition for recovery after her confinement. When laceration does exist, no matter how slight, its immediate repair should be instituted.

Stitch Abscess.

I. S. STONE, M. D.,
WASHINGTON, D. C.

My attention has been called to this subject by an article in a recent medical journal, wherein the writer tells of a new method which he claims will prevent these undesirable results of wound infection. It is most remarkable that so many surgeons confidently look for the impossible.

The journals are ever publishing methods by which we can prevent wound infection and stitch abscesses in all cases. These articles fall far short of the mark, in that there is but little difficulty in preventing wound infection in any case where the infection does not come from the patient, and not from the surgeon. It has been generally taught that the proper use of antiseptics will prevent the formation of pus in wounds. The writer, in common with most surgeons, has tried these methods, some of which are rational and others perhaps irrational, and has long since discontinued the extreme measures so con-

fidently applied by many with the hope of preventing wound infection.

He has never seen better results than may be obtained by asepsis, rather than so-called chemical antiseptics. For months he has seen no case of wound infection, save when the infection came from highly infectious serum or pus which escaped during the operation. The abdominal incision is perhaps more readily infected than any other, for obvious reasons. Any operator must know that the contents of a dermoid cyst, or that pus from an infectious ovarian abscess, or serum from acute pelvic peritonitis following abortion, will cause wound infection, it matters not how many minutes are spent in washing the abdomen of the patient or the hands of the operator. We should discriminate between these cases. If stitch abscesses occur they are due not alone to stitch infection, but generally to wound infection. The skin

unites readily before pus forms and the suture tract affords a ready outlet for this discharge. When the stitch is tied tightly and cuts the tissues, the pus finds an easy outlet at such a point. There is no need of a stitch abscess in clean surgery, but the greatest care will not prevent infectious pus from doing its work in many and perhaps in most cases, and this surgery is not clean. in fact cannot be. We do not anticipate stitch

abscesses in supra-vaginal hysterectomy without the wire, nor in simple, non-infectious ovarian cysts. The surgeon is generally to blame when such occur. But if these abscesses do not occur in wounds which have been flooded with pus, there is reason to believe that the pus was sterile, as no amount of washing or cleansing the abdominal incision will insure non-infection.

1449 Rhode Island Avenue.

SOCIETY PROCEEDINGS.

Massachusetts Medical Society, Suffolk District.—The Section for Obstetrics and Diseases of Women.

JAMES M. JACKSON, M. D., SECRETARY.

REGULAR meeting, Wednesday, February 27, 1895, Dr. G. H. WASHBURN in the chair.

Dr. C. G. CUMSTON.—“Report of Case of Osteomalacia — Operation — Recovery.” (See “ANNALS,” page 163.)

Dr. S. E. COURTNEY. — “Report of four cases of Eclampsia occurring at Boston City Hospital.”

REPORT OF CASE OF ECLAMPSIA AND DEATH. BY DR. C. H. HARE.

Discussion.

Dr. SINCLAIR. — I have very little to say on this subject. We have no more formidable state of things to meet than a case of eclampsia in a pregnant woman. It was my misfortune to meet with more of them at one time than seem to occur nowadays, I think attributable to the

care taken by the rising generation of physicians who know better about these things, seeing to the general condition of the patient, especially her kidneys. At one time in this city it seemed to me that puerperal convulsions were more common than now, perhaps seemingly so; at any rate I know they were more fatal than now, because the means for treatment were limited, and consisted largely in bleeding and opiates, not bad treatment by any means, certainly not very successful, although persisted in. I think today, by a great many who believe in bleeding as being one of the most powerful agents in reducing arterial pressure in many cases dependent on uræmic trouble. We did not know much about the pathology of these cases. I do not know as we know much now; at any rate we knew less then, and resort to delivery in any case unless the mouth

of the womb was open and the head or some portion protruding was not had, because it was contrary to all teachings, was meddlesome midwifery. There was a certain autocracy that prevailed over the young men, especially by the older, and nothing was done that would not be approved in higher quarters. We do not hear much of that today.

I was house officer in the lying-in hospital in 1857-8, and there was brought in a woman in convulsions in the eighth month of her pregnancy. She was given chloroform, but she died. There was no thought of delivering that woman, although after her death it was with difficulty that the child could be kept in the womb, and I thought why should not that woman be delivered, at least the womb be emptied and give the woman a chance to recover. It was thought that it was meddlesome midwifery. But the thought came to me that if such a case presented itself to me I should empty the womb. A case did occur. I delivered by bimanual dilatation and continued to do so when a case of the kind came up, I think saving my patient in one or two cases, and in one or two losing the child. I did this privately ten or twelve years, until twenty-five years ago, after delivering a woman who had been in convulsions several hours, little or no secretion from the kidneys, I delivered her in one and a quarter hours by bimanual dilatation without a convulsion during the manipulation. Under the ether the woman was delivered without leaving a single trace of tear, the child born alive and still living, and the woman had several children afterwards. That case was detailed before the Boston Society for Medical Improvement, January 18, 1870. The Medical Improvement Society was perhaps the most conservative body of medical men in this land, and I cannot say that my case was received with the utmost warmth

or welcome. But I did not care very much about that. I felt that it was a plan that was useful and a thing come to stay. It has saved some lives in this community.

In regard to bringing about labor in one or two cases of convulsions in early pregnancy, fifth month: I had such a case where the eyes became dim, and evidently a bad state of things was threatening; there I delivered at the fifth month with perfect recovery. I think that we are apt to delay in those cases, rather than to go to work at once, and I have seen cases where that thing was impressed upon me very strongly. I was called to Dedham a good many years ago to the case of a young woman in her first pregnancy, in convulsions. I said to the physician in charge that I did not think any temporizing would be of service and I would advise immediate delivery. Said he, if the woman should die we should be accused of killing her. Twenty-four hours later I was sent for. She had twenty-seven fits, and she died nine hours later, as also the child.

I will say this to the younger men here, that bimanual dilatation is a very simple thing. It is too simple, and I believe that Dr. Lusk when asked why he did not put it in his book said he did not dare to, it was so easy and men would be doing it. It must be done with deliberation and care. I have seen very good men in Boston tear the uterus. It can be done with a great deal of safety. It is called forced delivery, and so it is in a way, but not a bit more force than natural pains would give, however.

Dr. CALL.—I do not know that I can say anything new. My experience at the New England Hospital at the maternity department has given me some cases. We do not have as many cases now as when the hospital was in the city. I remember when I was a student there it was not very

infrequent to have a woman brought in comatose, having had convulsions outside. Now that the hospital is quite a distance from the center of the city we seldom get those cases, and for three years there has been no case. I think the treatment is almost exactly like that detailed by the gentlemen to-night,—hot packs, bromide and chloral per rectum and ether during the symptoms of convulsion. I know that we have not lost a case there with convulsions now for I think six years. At the same time, as I did not look up the records, I cannot tell how many cases we have had in that time. A point that I would like to ask about is the length of time after delivery, provided we get a patient who has albuminuria safely delivered, the length of time after delivery that we must still remain in fear of convulsions. My attention was drawn to that by a private case, because I have heard it said by physicians of experience that if twenty-four hours elapse after delivery without convulsions you may feel that the patient is safe from convulsions at least. I was called to see this patient about three weeks before the normal time of her delivery, and found her with extensive œdema of the face and extremities, and, as she was a woman among the working classes, who could not command skilled nursing, I advised removal to the hospital, but they were not willing to act at once, and within forty-eight hours I was called, being told she had been delivered with one pain. She appeared to be doing very well. I congratulated myself that she had gotten through. For twenty-four hours she did very well, but about the end of twenty-four hours she complained not of any head symptoms, and the urine seemed to be fairly free, but of pain in the back of the neck and shoulders. She thought she took cold from lying on the floor after labor, but she had no symptoms such as we usually look

for in cases with convulsions, but twenty-four hours later, forty-eight after delivery, she was found unconscious, for twenty-four hours had convulsions at intervals, and for several days was partially comatose, although she eventually recovered and had a child afterwards without any trouble. That was the latest case I have known of.

Dr. SINCLAIR.—In answer to the question about the lateness which convulsions may come on I have only a single case. A woman was confined and I was called to her, I think two or three days, when she went into convulsions and the convulsions kept recurring, and finally I kept the woman under ether continuously, did not let her wake up for something like nine hours. I gave her also a large dose of calomel and jalap, had an excellent evacuation of the bowels; she recovered after a long time to have, I believe, some pelvic peritonitis, which kept her in bed for weeks.

Dr. CUSHING.—I would like to ask the reader in regard to the use of morphine. I do not think I heard it mentioned whether it is entirely out of fashion in the hospitals here. It is quite largely used in different parts of the country. By those who use it it is thought to be very efficacious, used in conjunction with chloral. At the time when I was in Bellevue Hospital it was found out quite accidentally that morphine used hypodermically was a very satisfactory treatment of uramic coma,—the last thing one would expect, and it would be found out by one of the house staff who gave it for some reason and it set the patient in a very profuse perspiration, quieted spasmodic symptoms, and after that it was used a great deal. I have known that it is used by a good many and with a good deal of success, not, however, to the exclusion of chloral or ether.

Dr. CUMSTON.—Dr. Sinclair, in

speaking of the dilatation of the cervix, I believe, referred to manual dilatation. In speaking of the instrumental dilatation there has been recently invented by Tarnier a very good instrument which he has been using for the last three years at the Maternity in Paris, and which I think now is quite largely used in France and has been used in New York. It is described in many of the new French treatises on obstetrics. It consists of three blades about as long as forceps, and on the end of the blade that is introduced into the uterus it is bent at right angles, you push it beyond the internal os and then introduce each blade separately; they all join together like forceps, and on the end which is outside you put on a very large strong piece of elastic band, and little by little the elastic contracts and dilates the cervix with laceration. You can obtain full dilatation in about an hour or an hour and a half. It is a very safe method.

Dr. HOGNER.—One speaker told how long after delivery convulsions may come on. We know that eclampsia depends on the tetanus bacillus. They have found in such cases the tetanus bacillus in the child and in the placenta, and I think the person delivered may have eclampsia a long time after the delivery from the tetanus bacillus.

Dr. TWOMBLY.—The cases to-night have been instructive. There are never too many cases of this kind reported. I remember when I was in Karl Braun's clinic I waited nearly a year before I got one, and then did not see the convulsion at all. In my own practice since then I have met with it several times. Each case must be considered by itself. The consensus of opinion in these days is for immediate delivery. The risk to the woman by letting her have convulsion after convulsion is very great, and we do not diminish the chances

of risk to the child. In fact, the child is of secondary importance to us; the mother's life is the first and greatest. At nearly full term I think we all would consider immediate delivery the best method of procedure. Where the child is at the viable stage or just at the viable stage, it is a serious question whether to wait and hope that the best will come without immediate delivery or with forced delivery, with the chances of losing a child, but even in that case I believe it is better to deliver immediately rather than to run the risk of losing the mother. We cannot tell how many convulsions or how few will terminate her life.

There are many different symptoms of eclampsia, and the principal ones we know very well. In a case of mine there were a few I would like to mention, as perhaps not always seen. A young woman of twenty-six, in her second pregnancy two months before delivery, had what was supposed to be a partial paralytic stroke. The sister described it to me as being a woman in perfect health falling on the floor; no fit. After recovering consciousness she spoke thickly with the tongue protruding to the right side of the face, partially paralyzed. She could mumble words, but could not formulate ideas. This passed off in two or three days. Two days before full term I was sent for in great haste, as she had been vomiting all night; had intense headache. I found every symptom of eclampsia present except the convulsion, and that we could expect at any minute. There was one noticeable thing beside intense blinding light before the eyes: it was twitching of the abdomen, which I had never seen before, from the navel crosswise nearly twenty times a minute; the navel would go to the right with a twitch, and it kept up until the convulsion occurred and then stopped. Immediately sent for an assistant, and, with-

out waiting any time at all, performed internal podalic version and delivered the child, and she made a complete recovery. I think Dr. Hare will agree with me that it is the best plan in these cases not to delay, but immediately proceed, even if we do have ignorant people call down unkind things upon our head. The question came up at the time I delivered this woman, whether it would not have been better to put on forceps and deliver the child rather than to perform internal version. I remember Dr. Worcester had a case in which he put on forceps and delivered the woman all right, and the woman died in a short time, and no apparent reason could be found. It seems to me, the head being high up, the risk of lacerating the soft parts and further complicating the case would be a sufficient cause for not using the high forceps. I have no doubt it is done successfully in some cases, but version is preferable, I think.

Dr. WHITE.—My experience in puerperal eclampsia has not been great. I have seen in the past two or three years three or four cases. One was an Italian, a primipara. I was called to see her three or four days before delivery. There was considerable œdema about the feet and ankles. I found a slight trace of albumen in the urine, and treated her in the usual way with milk diet, bromides, etc., and in a few days I was called to deliver her. I staid some three or four hours, and labor seemed to be going on in a normal way, and when the head was engaged a convulsion came on. I gave ether and delivered rapidly with forceps. She came out of the ether very well, had convulsions continuously for three days and finally recovered after quite a long illness, but the child died on the third day in convulsions; whether the tetanus bacillus was there I do not know. Another case I saw in consultation in Winthrop.

She had had a number of convulsions, feet considerably swollen, labia very much swollen. She had been in labor some hours. I could find no signs of life of the child. I applied forceps, and, to my surprise, delivered the head without the rest of the fœtus. After working some hours, I got the arm down. The contractions were firm and I could not turn the child. I delivered the arm. After working some time, I got the other arm and delivered that, and finally I got a traction hook, put it into the anus and delivered the remaining portion, and then had to scrape the placenta off with my hands. Soon after coming out of the ether the woman had a convulsion, and three or four convulsions followed in rapid succession and the patient died. Another case, a primipara, had considerable œdema about the face and feet; labor went on normally; convulsions rather severe; administered ether, delivered, and she recovered, and the child lived.

Dr. BLAKE.—I etherized a patient about a year ago in whom there were two interesting symptoms, no premonitory symptoms except intense pain at the epigastrium. The patient, a primipara seven months pregnant, and the greatest difficulty was found in dilating the cervix. Dilatation with the fingers was found impossible, and the uterine dilator was resorted to. The internal os would not give way at all, and the fœtus was delivered finally much in the way reported by Dr. White, first a leg and then an arm, and finally, after seven hours' continuous working, the entire fœtus and placenta were removed. The woman did not recover consciousness fully, had one or two convulsions, and died about twenty-four hours afterwards. The point of the extreme difficulty in dilatation I think worthy of notice.

Dr. CUMSTON.—There is one symptom which indicates coming albu-



FIBRO-CYSTIC TUMOR OF UTERUS, ATTACHED OVER PLACENTAL SITE.
See page 524.



SUB-MUCOUS FIBROID OF UTERUS. COMPLICATING PREGNANCY. SIX MONTHS' GESTATION.

minuria; namely, what the French call the *doigt mort*, numbness of the index finger when the patient wakes up, which may remain an hour or two hours.

Dr. SINCLAIR.—I think pain in the epigastrium is a remarkable thing, and it has occurred in many instances.

Dr. COURTNEY.—In answer to Dr. Call's question as to how long afterwards we may expect convulsions, I have been looking up eclampsia at the lying-in hospital since its foundation, and I think there have been sixty-four cases; about sixteen per cent. have been post-partum eclampsia, and I have noticed that the time ranged from one hour to one month. There was one patient who died in uræmic convulsion one month after delivery; and the average number of hours after delivery, if I remember

correctly, is seventeen. In answer to the question Dr. Twombly raised, I had one case at full term, and Dr. Townsend advised high forceps. I remember two cases at the lying-in hospital in which high forceps were used with the best results. I intended to add to my paper the statistics of these sixty-four cases,—or rather, the cases of the lying-in hospital for the last twenty-one years,—but I decided to leave that for a later paper.

As to morphine, in looking up the cases in the lying-in hospital, the use of morphine used to be very prevalent. Some six or eight years ago they ceased using it; but the most singular thing is that more patients were saved when they used it than since.

From the statistics of the lying-in hospital it would appear that eclampsia is increasing every year.

The Obstetrical Society of Philadelphia.

A STATED meeting of the Society was held April 4, 1895, Dr. WM. H. PARRISH, President of the Society, in the chair. The first paper read was entitled

A CONTRIBUTION TO THE CLINICAL STUDY OF UTERINE FIBROIDS,

by ANNA M. FULLERTON, M. D., Physician in Charge Woman's Hospital of Philadelphia.

This paper called attention to the various complications which are apt to arise in the history of uterine fibroids, more particularly to those resulting from the occurrence of pregnancy in uteri so affected. The paper was illustrated by photographs and wet specimens from cases of the kind which had come under the author's personal care in the wards of the Woman's Hospital of Phil-

adelphia. It was shown that the majority of cases so complicated necessitated surgical interference even when the growths did not encroach upon the area of the superior strait in such a way as to render delivery, *per vias naturales*, impossible. The records of the cases cited showed the period of gestation to be one of unusual suffering and discomfort, with a constant disposition to premature delivery which rendered protracted rest in bed and the free use of opiates a necessity. Labor began in almost every case with premature rupture of the membrane and was characterized by the singularity in efficiency and severity of the pains.

The growth of the tumors during pregnancy, particularly when the placenta was located over the site corresponding to the attachment of the tumor, was demonstrated as being

very rapid. The uncertainty as to prognosis in the puerperium was exemplified by the termination of the cases reported.

CASE I. (specimen and photograph shown) illustrated the danger attendant upon a placental attachment over the site of the tumor. The patient, M. B., a colored woman and a primigravida, aged 29 years, had by constant, careful supervision been carried to the full term of her pregnancy. A large pediculated fibroid was attached to the posterior surface of the uterus near the fundus. The tumor had increased with astonishing rapidity during the pregnancy and caused much suffering from the pressure which it produced upon the abdominal viscera. The labor began with premature rupture of the membranes and had to be terminated by a high forceps application. The child, a girl weighing 3,010 grammes, was extracted without much difficulty and in good condition. The patient recovered well from the effects of the anæsthetic which had been administered. Some tendency to post partum hemorrhage was readily controlled by the application of the ordinary measures for its relief. About two hours later the patient died in sudden collapse—resulting, as was shown by the autopsy, from the entrance of air-emboli into the circulation through the dilated uterine sinuses—which caused paralysis of the heart. A sudden movement on the part of the patient was probably responsible for the introduction of air into the sinuses at the placenta site, where the contractile power of the uterine wall was at fault.

CASE II.—B. H., colored, aged 31, a primigravida, had a tumor of similar size and character complicating pregnancy. By constant medical supervision gestation was carried to full term. The labor began with premature rupture of membrane and was terminated by forceps, being

greatly protracted because of the inefficiency of uterine contractions. The child, a boy of over normal weight, was asphyxiated and could not be resuscitated. The mother made an uncomplicated recovery.

CASE III.—J. V., a farmer's wife, white, aged 42 yrs., a primigravida, had been seen by two eminent gynecologists, both of whom had thought it probable that, owing to the presence of multiple fibroid growths, some of which were attached to the lower uterine segment, delivery by means of a Porro operation might be necessitated. Premature rupture of the membranes occurred in the eighth month, and the foetal head making an effort to engage, this was further assisted by keeping the growths which encroached upon the pelvic inlet pushed up by manipulations per vaginam. The head descended sufficiently to be within the grasp of the obstetric forceps, and a girl baby weighing 2,710 grammes was extracted. Both mother and baby left the hospital in good condition three weeks later. Thirteen months after this delivery the patient returned to the hospital again pregnant and near full term. The tumors appeared larger than in the preceding pregnancy. Upon the onset of labor, and after dilatation was completed, it being found that the foetal head could not descend, and an effort was made to deliver by performing version. This was done, not however without some delay in the extraction of the after-coming head, which caught and entered by the projection inward of one of the tumors. The child lived but twenty-four hours. It was a large boy baby. A year and a half later the patient again came to the hospital and was delivered at term of a girl, weighing 3100 grammes by the application of forceps. The tumors had lengthened their pedicles, so that on this occasion they were more easily managed during delivery.

Both mother and child did well. Since the last delivery the tumors have decreased markedly in size.

CASE IV.—A. B., a colored woman, aged 29 years, a primigravida, aborted at the end of a six months gestation. After expulsion of the foetus and secundines, it was found a large submucous fibroid, about the size of a foetal head, completely filled the uterine cavity. The portions of the uterine wall not occupied by the tumor were so thinned by the distension to which they had been subjected that it seemed remarkable that they should not have ruptured. The length of the foetus was 40 centimetres, its weight 520 grammes. The patient's convalescence was without event until the 13th day of the puerperium, when a sudden rise of temperature indicated the onset of sepsis. The uterus was irrigated with an antiseptic solution. Septic symptoms persisting, hysterectomy was advised. Consent was not obtained until six days after the onset of the first septic manifestations. The patient being moribund, the operation was not done. The patient died within six hours after consent was given. An autopsy showed a condition of general sepsis, hence operation would have availed little at that late date. Section of the uterus showed the cavity to be occupied by a single submucous myoma in a state of degeneration. (Specimens and photograph shown.) The endometrium was in a state of gangrenous endometritis. Death, it was decided, was due to sepsis from gangrenous endometritis, resulting from the breaking down of the tumor which had infected the endometrium.

The other specimens shown by the author were of cases uncomplicated by pregnancy, in which hysterectomy had been performed by amputation at the supra-vaginal junction, the patients all making a good recovery. One, a large oedematous myoma, had

been removed from a patient so ensanguinated by excessive hæmorrhages as to be in a condition bordering upon pernicious anæmia. Examination of her blood upon admission to the hospital gave the following result: Red blood cells irregular in shape, agglutinated and numbering about 2,400,000; hæmoglobine, 25 per cent. The patient was treated for the anæmia by rest in bed. Tamponing of vagina to control hæmorrhage, ferruginous tonic, bone-marrowed, and forced feeding, until the blood examination showed the cells to be normal in shape, and this number reached 5,300,000. The hæmoglobine test came up to 55 per cent. The patient was then operated upon. Any possibility of a resulting shock was anticipated by the injection of a pint of normal salt solution into the cellular tissues, immediately after the operation. The strength was supported during convalescence by nutrient enemata.

Another specimen was a tumor the size of an infant's head removed from a patient 59 years of age. The entire tumor had undergone calcareous degeneration. Two others were exhibited to illustrate a class of deep-seated fibroids, in which pressure symptoms were often most distressing; and, in the removal of which the author felt that the supra-pubic method of treating the stump would have been extremely difficult, if not impossible.

Discussion.

Dr. B. F. BAER. — Five or six years ago I made the statement in this society that I believed that a woman who has a fibroid tumor ought not to be permitted to become pregnant; that if she is made to understand the dangers attending that state under these circumstances and wishes to avoid it, something should be done to prevent the danger of her becoming pregnant. Because of that state-

ment and of that belief based upon my own experience, I had much unfavorable criticism, but I believe that that view has been borne out by subsequent observation of these cases, and certainly is by this valuable report presented by Dr. Fullerton. Although one of her patients went to term twice and escaped with her life and one or two of her children, she only was enabled to do so by the skilful and timely treatment which she received at the hands of Dr. Fullerton. I believe that if we should take the experience of all of us in this room this belief would be fully supported; I mean that it would be found to have been supported on correct observation of these cases. If we take an instance where offspring is desired in a family and the patient understands the danger and she wishes to run the risk, that is her affair; but, on the contrary, if she demands relief from the surgeon, he is not warranted in withholding that relief, either by removing the uterine appendages or by hysterectomy. That was regarded as rather bold at the time, by the society, but the experience I have had since has only made me more emphatic than I was then with regard to the duty of the obstetrician in that class of cases. I do not believe that a woman suffering with uterine fibroids should be compelled to furnish citizens to the state, unless she wishes to do so herself.

With regard to the causation of fibroids and the intimation given by the reader of the paper that they are on the increase, I am not able to throw much light. From my own observation, fibroid tumors do not seem as plentiful as they were a few years ago. Then I remember that quite a string of fibroids came constantly to the clinics. It is true that they were not then diminished by hysterectomy as they are now, and therefore there were more of them.

My observation was that they were more frequent in sterile women; that the presence of the fibroids contributed to the sterility, and that fibroids develop more frequently in sterile women. Dr. Emet's opinion was, that they were more common in single women, and he may be correct. That they follow sub-involution, I have some doubt. Of course sub-involution tends to proliferation of tissue; but that it tends to that form of proliferation which leads to increase of fibroid cells I rather doubt—that it is a common cause, I mean. But this is no reason why such cases should not be treated, because they have sufficient symptoms to make us anxious for them. I fully accept the idea that endometritis may become salpingitis; but that it gives rise to the development of fibroids subsequently, I have some doubt about that because, in a great many fibroids that I have removed, the appendages were not diseased. It is true that very many were; but many were not. I suppose about fifty per cent. had not. I am speaking of patent disease, hemato-salpinx, salpingitis, hematoma and the like. Therefore, I cannot say that disease of the appendages ought to be classed as a cause of fibroid tumors.

As regards the question of treatment and management after delivery, I fully endorse all that was done in these cases. Certainly the patient, who was delivered three times, was very successfully managed. Several years ago I operated upon a patient whom I have frequently spoken about; it was one very like one of those reported where the tumor caused death, but the tumor was not so sessile. The woman was four and one-half months pregnant, when the tumor dropped down into the pelvis and pushed the uterus up into the abdominal cavity. That woman was exceedingly ill and exceedingly anemic when I was called to see her,

although she had not lost any blood. I attempted to push the tumor up but it could not be moved; even after ether was given it could not be moved. A laparotomy was performed and hysterectomy done, because the tumor looked sarcomatous. I amputated at the supra-vaginal junction and she made a nice recovery. I saw her a short time ago and she is still in perfect health. I acted upon the principle, I remarked a short time ago, that she ought not to be required to carry a child to full term. I think it a pity that in the case mentioned by Dr. Fullerton that the woman was permitted to carry the child to full term. Each case, however, is an individual, and must be treated as an individual, and if a patient can go on with apparent safety, of course operation is not to be thought of; but, as a general rule, the principle that I have decided upon is, I think, safe.

The tumors shown to night prove the importance of removing the growths by any thorough operation and that internal treatment is of doubtful value. They confirm the view expressed that tumors of this kind cannot be treated by any internal method.

Dr. CHAS. P. NOBLE. — I was very much interested in the paper; the cases especially which were accompanied by pregnancy were very instructive. To decide what is the proper method of dealing with pregnancy in a fibroid uterus is a very important question. The experience of Dr. Fullerton certainly would not incline us to depend upon nature where the fibroids are of considerable size. It is well known that there are certain dangers connected with this state, — more in the sub-peritoneal variety and less in the sub-mucous, — dangers of sepsis and peritonitis, and a mortality of fifty per cent. is certainly very impressive. As Dr. Baer has intimated, it is difficult to lay down

any hard and fast rule for any class of cases, and I do not know that I would subscribe to any single rule. It is certainly safer to do a Porro operation at the time of labor than it would be to do a hysterectomy at a subsequent period. I doubt if it is any safer, if we add to this the danger of labor with a fibroid tumor. Therefore, unless the fibroids were sub-peritoneal, I am inclined to the Porro rather than a subsequent hysterectomy.

The case of calcareous degeneration reminds me of the case of a woman upon whom I operated, but with a less favorable result. The tumor was about the size of a child's head, and entirely filled the interior of the uterus. The patient died with suppression of urine.

Dr. PRICE. — Unquestionably the Porro operation is much safer than any other method of treatment. It prevents any further trouble. I have seen several of these cases nurse their children on the third day and with no trouble. The only question is the possible removal of these tumors by the supra-vaginal method. I think that we could get more attention to the subject if gentlemen who prefer certain methods of treatment would speak of them in the discussion. I have seen many fibroid tumors in this city with every possible complication, and I found no possible objection to the *noeud* in any one of them. In our records of private and hospital work we have a mortality as low as five per cent. Can those who advocate other methods do any better? I doubt it. If I open the abdomen to amputate the uterus, if I remove any of it I remove it all, and always use the *serres noeuds*. Cancer is the one condition which would make me consider for a moment.

I want this society to notice the nervous condition which follows the fibroid condition of long-standing. I have a case now under observation.

I first saw her two years ago and she would not then submit to an operation. Most of the time since she has been confined to the house from pressure symptoms and pain and a state of mind bordering on insanity. That woman was sent to me by another patient from whom I removed a fibroid tumor attended by the same nervous symptoms, and who has a sister in the insane asylum. That woman was completely relieved of her nervous symptoms and is now a sound and healthy woman. She sent her friend to me because her condition was the same as her own had been. Now, gentlemen, why should these cases drop into our hands and not into other hands as well? We are willing to have these cases investigated from start to finish. I ask the society to note the mental state in these cases of long-continued disease and ovarian irritation. In the last two years I have not operated upon a single case of this kind where the patient was not mildly insane. I do not mean exactly insane, but mildly insane.

Dr. J. M. BALDY.—I find myself at variance from other speakers. First, in the delivery of a woman having a fibroid tumor. I think that there have been a number of women delivered in Philadelphia during the past year who had fibroid tumors, without special trouble and I think that difficulty of delivery has been greatly exaggerated. In a number of instances, preparations were made for Cæsarian section, but the women delivered themselves perfectly well. In the cases the tumors retired into the pelvis as the fœtus descended. Dr. Fullerton has reported several cases this evening in which the patients were delivered with apparent ease. I would be very loathe to act upon the assumption that because a woman has a fibroid she should be denied child-birth, if she so liked, or that her pregnancy should be ended.

I have removed fibroid tumors, but for other causes than pregnancy. I have seen many cases with fibroid tumors who have born children very frequently. Some cases upon which I wished to operate have gone home and have had children subsequently. Mark you, however, I would operate, but for other causes than pregnancy.

Then, I have heard lately much about pressure symptoms. I have not observed them. I have had a different experience from Dr. Baer as to the coexistence of disease with fibroma. I have found cases of pyosalpinx, hematoma, and other coarse conditions, but it is not the common ordinary septic disease which we meet with so often in pelvic cases. I believe that the same factor that caused fibroid change in the uterus has caused a fibroid change in the ovaries and tubes. From the character of the disease, in my experience, it is, as the rule, due to septic infection.

Now, as to the removal of the uterus by the extra-peritoneal method. I resisted the operation for a number of years, and then I tried it and dropped it like a shot. The tumor that can be removed by the extra-peritoneal method can be removed by the intra-peritoneal, and he who says that it cannot does not understand the operation.

Dr. Price has spoken of a mortality of five per cent. after operations for fibroids. Now, when I can't operate with dropping the pedicle, without a mortality of less than five per cent. I will lay down my knife and not take it up again. Another reason why we should drop the extra-peritoneal methods is that I have now in the hospital three cases which had been operated upon by Dr. Price, and they have enormous hernias. This is the objection and the reason why I dropped the operation. One of the cases has a fistulous opening which cannot be closed. No one can do these operations more carefully

than the Drs. Prices, and if they cannot do it without hernia no one can. I think that this method is not in the technique of operation, however, but in the method. I have not observed it in the method I have adopted. By dropping the stump I have eliminated a very large and important factor in the occurrence of abdominal hernias.

As regards the importance of doing the operation, I agree with Dr. Price, except in the single instance in which the tumor is low down and principally affects the cervix.

Dr. M. PRICE.—As to Dr. Baldy's having three of our cases with hernia, I am glad that they are so few. We have a hundred and fifty walking about that we know of, and I have no doubt there are others. A man cannot open the abdomen in so many cases, especially where you have to cut through several inches of fat, without producing hernia in some cases. The cases referred to may have belonged to our early operations, when we prided ourselves on the patient's early getting up. Hernia may follow in any case of operation upon the abdomen.

It has been also said that those men who do the extra-peritoneal method have to remove the ovaries. Where we have large tumors, no man would expect to remove the ovaries. But I will say that when we commence to operate upon a case, we do not stop until we finish it, no matter what may be required. Now the case referred to last as exceptional, by Dr. Baldy, is just the case in which it can be most easily performed and the tumor removed. No man or woman should forget what Dr. Levis said to the students, that "Fibroid tumors have a capsule and can be shelled out." I have seen cases in which the tumor extended down to the anus, but they were shelled out and closed with the noead. These cases are a little more danger-

ous; but still we have a mortality of less than five per cent.

Dr. BALDY.—With regard to the class of cases an example of which I saw in New York, which Dr. Price considers so easy. Those cases which develop posteriorly and press backwards are very easy to shell out by the abdominal operation; but this was a peculiar growth which was buried in connective tissue.

With regard to the nervous symptoms of pelvic disease, I have not seen anything that would separate fibroids from other lesions. Any long-standing chronic disease in the pelvis will break down the health and cause nervous symptoms; but that this condition is principally due to fibroid tumor I do not believe.

With regard to inflammatory disease of the appendages being the cause of fibroid tumors, I have seen nothing that would convince me that it is true. Since the theory was brought up by B. two years ago and Emmet, of New York, I have not been able to convince myself that there is anything in it, further than where a constant source of irritation exists and there is a tendency to the formation of fibroma, it may occur; but this is a very different proposition.

The next paper was entitled,

CASE OF HYSTERECTOMY BY LIGATION FOR FIBROMA,

by GEORGE ERETY SHOEMAKER, M. D., Gynecologist to the Methodist Hospital.

The tumor shown was removed after a six months' course of electrical treatment in a private sanitarium in another city had failed either to lessen the excessive bleeding or check the growth of the tumor, which reached the umbilicus. The electrical treatment also caused severe pain. The patient was thirty-seven years old. She was exhausted at each period by bleeding, and had incipi-

ent. phthisis, tubercle bacilli being demonstrated.

Hysterectomy was decided upon in order that climatic treatment might be brought to bear on the tuberculosis, in spite of increased operation, risks from coughs and possible catarrhal pneumonia. The cervix was left, the pedicle dropped, and worm-gut stitches buried in the abdominal wall. Recovery followed.

In discussing the subject of operation on patients with cough, the possible reflex origin of the cough due to the tumor was alluded to. It was held that in acute bronchitis it would be well to delay the operation a few days. In chronic bronchitis the risks of hernia and of secondary hæmorrhage are increased, but not insurmountable. In advanced phthisis, operations of election are rarely called for. In incipient phthisis, a focus of pus in the pelvis or a bleeding tumor, remove the chances for general recuperation, and when the patient's circumstances allow the climatic treatment of the tuberculosis; while intelligent operative treatment, though at somewhat increased risk, enables the enemy to be beaten in detail.

REPORT ON A SPECIMEN OF ANASTOMOSIS OF INTESTINE, ELEVEN MONTHS AFTER OPERATION. BY DR. J. D. MURPHY, IN SEPTEMBER, 1893.

Dr. Murphy's operation was done in a private hospital in this city to close a fecal fistula following strangulated hernia.

When the patient came under my care nine months later with a large hernia at the old site, the sac and coverings just separating at the neck with gangrene; she stated that feces had continued to escape at intervals from the old site ever since Dr. Murphy's operation, but she was not sufficiently intelligent to know whether

the acute obstructions then present had been preceded by a gradually developing obstruction or not. She recovered from my operation of removing the gangrenous tissue and attaching the portion of bowel containing the several fistulous openings to the wound. Two months later an attempt was made by Dr. Holmes, who was kindly substituting for me, to close the fistulas by resection and another button anastomosis, but death resulted from exhaustion, as reported elsewhere by Dr. Holmes. The specimen, with photographs, shows separation of the bowel ends except for about one-third of a circumference. Fistulous openings on either side of this point have everted rounded edges and are exactly as found at my operation.

Dr. S. S. Kneass, Pathologist to the Methodist Hospital, by microscopical section demonstrated the presence of mucous membrane at the points marked, which establishes the relation of the distorted parts.

A new hernial sac undoubtedly formed at the old site, containing the portion of gut which had been operated upon. Leakage into the sac had produced gangrene of the sac and coverings, while the bowel was simply thickened and inflamed.

Discussion.

Dr. M. PRICE.—I would like to ask if the case reported was one which had been in our hospital?

Dr. SHOEMAKER.—Yes, it was.

Dr. PRICE.—Well, I can affirm the fact that she did not pass the button while in the hospital. It was not an end to end anastomosis but a lateral one and less favorable for this operation, which was done so quickly by Dr. Murphy that we doubted the fact until the bowels were moved. This was very different from the method ordinarily followed by Dr. Joseph Price, who dissects the bowel

iree from adhesions and unites it end to end. I have seen him remove 15 to 18 inches from an indurated syphilitic bowel and have the button passed in from 6 to 8 hours after the operation. I believe that Dr. Murphy did everything that was proper in this case; but still the patient went out with the button. I do not think the method so suitable for a lateral anastomosis as the Lambert suture.

Dr. SHOEMAKER. — The only in-

formation I could get about the case from Dr. Price was that it was not an end to end suture. I believe the Murphy button a great addition to our armamentarium, as it is the quickest and best method of end to end union of the bowel. I always take a set with me, and if there is time it is the method surgeons should adopt. I believe though that the stitching method, although taking more time, is in some cases of greater advantage.

Societe Anatomique de Paris.*

MEETING OF JANUARY 11, 1895.

PROFESSOR CORNIL, president, in the chair.

TUBAL PREGNANCY, RUPTURING INTO THE PERITONEAL CAVITY, AND PROJECTING THROUGH THE INGUINAL CANAL, WITH ALL THE SIGNS OF A STRANGULATED HERNIA—LAP-AORTOMY. BY A. MALHERBE.

On the 29th of last December, a woman aged 34, was brought to the Hôpital Bichat in the service of Prof. Terrier. The face was pale, tongue dry and slightly brown in color, the pulse could not be counted.

The patient said that on the evening before, when in the water-closet, she was suddenly seized with a pain in the abdomen and felt sick. Immediately her hernia (for she had one) became hard, distended and extremely painful. Impossible to urinate. The next morning she vomited bilious matter almost continually.

For four days neither gas nor feces had been passed. A physician tried taxis for about a quarter of an hour

and during it the patient had a syncope.

She had her menses since Dec. 23. She had always menstruated regularly, the menses lasting about a week, the last having taken place normally on Nov. 23.

Had a normal labor eight years ago, but as she got up in two days, she noticed that she had a small tumor in the groin and was told that it was a hernia. This small tumor could always be easily reduced and caused no pain. The patient had never worn a truss. Never had been troubled by any abdominal disease, no miscarriages, no sickness of any kind.

The patient told us that about a month ago, after having carried a large basket of washing, she felt something crack and then began to suffer from the abdomen.

When I saw the patient, the abdomen was found to be elastic and painless; but the tumor in the inguinal canal was hard, tense and painful.

With the signs of strangulated hernia, after everything had been prepared, and the patient chloro-

*NOTE.—Only the subjects pertaining to gynecology and obstetrics are here reported.

formed. I made an incision over the tumor as in the operation for inguinal hernia.

I found a very tense sac, which when punctured with the bistoury, gave issue to quite a quantity of black liquid blood. When incised the sac was found completely empty, but on exploring the canal with the finger and then with the grooved director, a considerable amount of black blood came away. The ring and the walls were then rapidly and largely opened up with scissors; black blood and clots came away in abundance, inundating the field of operation.

After having well protected the intestine with gauze, I examined the adnexa on this side and drew them out. The tube was the size of a walnut, and at its posterior part a small tear was seen. The adnexa were removed after ligature with thick silk. The entire pelvis and Douglas cul-de-sac were filled with clots and liquid blood. Toilet of the parts was done by tampons and a drain inserted behind the uterus.

The peritoneum and muscular-aponeurosis were sutured with silk. The skin was sutured with Florence hair and the wound dressed with iodoform gauze and sterilized cotton. The operation lasted about an hour and a half.

The next day, December 30, there was a good deal of bloody secretion and a few grammes of liquid were aspirated from the drain and a new dressing applied. General conditions good. Temperature 37°.4 centigrade, pulse 100. The patient vomited several times in the night; 300 grammes of urine were withdrawn by the catheter. Everything went well and the drain was removed on January

11. The abdomen was soft; the patient eats well and has regained her color.

The tube which I here show you is about the size of a walnut and behind you will see an irregular tear in its wall. This little tear is very small but it is to it that was due the hæmorrhage that filled the entire pelvis. The ovary is in a sclero-cystic condition.

What appears to me to be of particular interest, are the clinical symptoms, completely simulating a strangulating hernia, and still more, the patient had had a real hernia.

It might be said that a vaginal examination could have thrown light on the condition. This is not certain however, for the hæmorrhage was too recent to have formed a collection. For me, the diagnosis was too evident to have even thought of it, and still more if a vaginal examination had been made it would have given no information regarding irriducible and painful inguinal tumor.

It now remains for me to explain how the blood in the peritoneum formed a hernia in the inguinal canal. I can only give an hypothesis. I knew that the patient had a hernia, but knew of no case in which blood from a ruptured tubal pregnancy had appeared in the sac of a hernia. I did not find any intestine in the sac, and consequently there seems to me every reason to think that the blood came into the cavity no longer occupied by the intestine.

Now, why was the tumor irriducible? It may be admitted that a clot, by some influence, closed the inguinal canal from behind, but I repeat, this is only an hypothesis.

MEETING OF JANUARY 25, 1895.

LATENT CANCER OF THE CERVIX.
INVASION OF BOTH URETERS WITH
CONSECUTIVE RENAL ATROPHY,
WITH CLASSICAL SYMPTOMS OF
CHRONIC INTERSTITIAL NEPHRITIS.
BY DR. A. PERON.

Patient aged 56, entered the hospital November 8, 1894, with uremic accidents (dyspnœa). She had been ill for about five months. On her arrival, the diagnosis of chronic interstitial nephritis was made. Her general condition was good, although anasarca had been present for the last two months. The lower limbs were also swollen. The face had the characteristic paleness of Bright's disease. The heart appeared enlarged, but the fleshy condition of the patient, prevented the exact measurement of dullness. Auscultation reveals a most typical *bruit de galop*, the greatest intensity being between the point and left border of the sternum. The pulse was hard and full.

The urine was very light colored and abundant (three and one-half to four litres in the twenty-four hours). It was clear and contained a little albumin.

By an absolute milk diet the symptoms for which the patient came to the hospital improved. The anasarca disappeared, only the left lower limb remained in a state of œdema up to the time of her death. This œdema was considered as a unilateral nephritic œdema.

The patient remained in the service for two months, having from time to time presented uremic accidents as dyspnœa, gastro-intestinal disturbance. *Bruit de galop* and polyuria were present up to the time of death which took place on January 8, and due to a cerebral manifestation of the disease.

The autopsy showed a cancer of the cervix uteri, limited to the middle

part of the cervix, between the isthmus and external orifice and invading the back of the bladder and compressing both ureters. The patient had never been attracted by anything in the womb.

Vaginal examination made when the patient entered the hospital, revealed nothing abnormal.

The uterus was considerably dilated above the cancer, its cavity containing about 350 grammes of a clear and sticky liquid. Both tubes were enormous, being the size of the small intestine, and were also filled by a mucous liquid.

Some cancerous glands in the right iliac region had invaded the iliac vein, from which was due the unilateral œdema. The right kidney was destroyed; the pelvis and ureter were dilated and filled with a little clear liquid. A very thin shell covered the distended pelvis and represented both medullary and ortal portion of the organ. The left kidney was of normal size, but adhered to the adipose capsule by a thick fibrous shell. The pelvis was dilated and contained urine and some purulent *débris*. The entire gland is the seat of a very accused sclerosis; connective tissue bands united the external fibrous shell to the pyramids. Where the sclerosis existed the glandular tissue was much reduced, especially in the cortical substance, and in some spots there were pin-head abscesses. The lesions were those of "chronic phlegmon of the kidney." The heart weighed 340 grammes. The left ventricle did not appear to be hypertrophied. The aorta at its origin was slightly dilated and several fatty deposits in Valsalva's sinus. No lesion of the endocardium or pillars. The other organs, including the brain, were normal.

The following points met with in this case I think are worth noting.

(1) The evolution of a renal atrophy, consecutive to a ligature of the ureters,—septic on the left, aseptic on the right,—in the form of a chronic interstitial nephritis, presenting classical symptoms. (2) The permanent polyuria with classical characters of the polyuria of Bright's disease, and persisting up to the time

of death in spite of a very advanced renal atrophy. (3) A *bruit de galop* without hypertrophy of the heart or left ventricle, absolutely typical and permanent, the consequence of renal atrophy in a woman whose arterial system appeared normal.

MEETING OF FEBRUARY 1, 1895.

Dr. Lejars, vice-president, in the chair.

TWO CASES OF OVARIAN CYSTS IN WOMEN PASSED THE MENOPAUSE. BY DR. DELAUNAY.

I have the honor of reporting to this society two cases of cysts of the ovary in a woman having passed the menopause and which presented some peculiar points, to which I desire to call attention. Both patients were operated by Dr. Péan in his hospital.

CASE I.—Mrs. C., aged 59. Nothing to note in her hereditary antecedents. In her personal antecedents we find abundant and painful menses, three labors and four miscarriages.

When fifty-two her abdomen suddenly increased in size, she went to the Hôpital Cochin, where aspiration was done, giving issue to seven litres of a reddish liquid. At this time the menses stopped.

She left the hospital in two weeks, and considered herself well up to last May, when a bloody discharge was noticed from the vagina, and which, although variable in quantity, has continued ever since. The patient has never complained of pain or noticed any fœtid odor from the discharge.

When she entered the service she was in good general health. The abdomen was increased in size, but irregularly, the most prominent part being over the right iliac fossa.

By palpation, a large, rounded smooth tumor was felt, with marked fluctuation. The uterus was normal.

On account of the former puncture and the nature of the liquid withdrawn, it was believed to be an old cyst of the ovary emptied by puncture, and in which a secondary cavity was filling.

On Jan. 21, 1895, the abdomen was incised, the tumor was punctured, giving issue to sticky liquid of a white color. There were no adhesions and the cyst was easily removed. The long pedicle was easily tied and the abdomen closed by three plans of catgut sutures. Recovery uninterrupted, the patient leaving the hospital Feb. 10, 1895.

Histological examination made by Dr. Renault, showed that it was an ordinary ovarian cyst.

CASE II.—Mrs. B., aged 51, entered the hospital Jan. 27, 1895. Nothing to note in her hereditary antecedents. Menstruated at seventeen, normally but with pain. Had three normal labors, but which were long and hard. Menopause at the age of forty-six. Three years later a bloody discharge appeared which lasted two days. This discharge at first appeared every week, later every two weeks. Nine months ago the abdomen commenced to increase in size and at the same time the patient had pain, especially in the left iliac fossa.

When she entered the hospital, it was noticed that the patient was a

little thin. The abdomen is enlarged, especially on the left side. By palpation a round, smooth and very movable tumor was felt, about the size of an adult head. Its consistency was more considerable at its lower part. There was considerable ascites. Diagnosis, cystic tumor of the left ovary, with long pedicle.

On January 8, the abdomen was incised, giving issues to five or six litres of ascitic liquid. The tumor was punctured and about two litres of a lemon yellow liquid withdrawn. The tumor, which did not adhere, was brought out of the abdomen, and its pedicle ligated and cut. Abdomen closed as in Case I. Recovery uninterrupted, the patient leaving the hospital on February 14.

The tumor presented two distinct parts: one cystic with thin walls while in the lower part, in a considerable portion, this wall was four centimetres thick, giving the tumor the aspect of a placenta with the membranes.

Microscopical examination by Dr. Brault showed that there was a fibromyomatous degeneration of the walls of the ovarian cyst.

What is most striking in these cases is the symptom metrorrhagia. There is nothing surprising when this symptom is present in women still menstruating, but in women having passed the menopause respectively seven and three years, is, I think, without being exceptional, infrequent. I have even thought that perhaps these metrorrhagias might mean more than a simple cyst of the ovary, and I had in mind in both these cases the possibility of a malignant degeneration of a primitively benign tumor, and all the more so in Case II, because of the abundant ascites present. Microscopical examination, however, showed that this was not the case.

It is, nevertheless, a fact, that in these particular cases where the gen-

ital activity had ceased, an ovarian tumor can produce modifications in the endometrium, which show their presence by metrorrhagia.

HYDRONEPHROSIS FOLLOWING AN
OLD TOTAL PROLAPSUS UTERI.
BY DR. CHARLES LEVI.

The patient, aged 52, had been affected for about ten years with a prolapsus of the uterus, which became total by straining on the part of the patient.

The patient was operated on by Dr. Tuffier on December 11, 1894, vaginal hysterectomy being performed. In the evening there was a little oozing of blood, which was easily controlled by hæmostatic forceps. The temperature rose to 39° centigrade, but the patient soon collapsed, and died the next evening without having shown any urinary or uremic symptoms.

At the autopsy, the left kidney was small, and presented the aspect of one with advanced lesions of interstitial nephritis, as its surface was granular. The pelvis was very dilated, the dilatation extending upwards into the calices of the upper part of the organ. The hydronephrotic sac continued directly with the ureter, which was dilated in almost its entire length to the size of the little finger. At its juncture with the bladder the walls were closed together. No cause for compression could be found. The kidney was not displaced or movable.

The right kidney was a little larger than the normal, showing a compensating hypertrophy. The ureter was normal. The walls of the bladder were very thickened. The ovaries were only sclerosed. The liver presented yellow hæmorrhagic spots on section. Spleen normal. Great congestion of the right lung; the left was only œdematous. The heart was large, with atheroma

of the valves; the mitral orifice was enlarged. Microscopical examination of the left kidney showed very marked changes of interstitial nephritis (dilatation, nearly cystic, of the tubes and glomerules, endarteritis, considerable proliferation of interstitial tissue). In the liver I found portal cirrhosis.

Now the interesting point of the autopsy was the presence of a hydronephrosis, which in this case cannot be explained by compression, floating kidney or operative trauma. The existence of hydronephrosis in relation to prolapsus uteri has already been mentioned by Virchow. Later, Philips reported a case. For Virchow, there is in these cases a compression of the ureters under the pubic arch. Some of the cases could be explained by torsion or a bend of

the ureter. But, it appears to me, as in the case reported, a simple traction produced by the prolapsus is sufficient to produce a flattening of the walls of the lower part of the ureter, resulting in a hydronephrosis.

The reason for the left kidney being affected may perhaps be explained by the more intimate relations of the left ureter with the uterus.

These urinary lesions may be of exceptional gravity, and the urinary organs should be carefully examined before performing an operation is decided on. I would also remark that in many cases of old prolapsus there exists, as in my patient, serious lesions of other viscera (kidneys, heart, liver), which should be regarded as a contra-indication to hysterectomy.

REVIEW OF GYNÆCOLOGY.

THE MANAGEMENT OF ABORTION.

BY E. J. ILL, M. D.

The main object of a paper to be read before a society is to furnish material for discussion. With this in view it will be my object not to present an exhaustive discourse, nor an opinion of writers. I wish to present for your consideration and discussion such a method of treatment as I have followed for a number of years, and with what I consider very good results. How important this matter is to me will be shown when I tell you that I was called upon lately to treat five septic abortions in a week. I would divide the management of abortion into two parts: 1st, the prevention of abortion; and, 2d, the management after we have once satisfied

ourselves that the product of conception must be expelled.

It will be proper to touch upon the causes of abortion, since its prevention will in some measure depend on this factor. I consider it as very rare to count external injury, a jolt or jar, as a potent factor in the production of abortion.

At the outset we will understand that disease of the foetus or chorion may produce abortion as well as disease of the mother. In this respect there is still a wide field for observation and study.

Among the diseases of the mother may be mentioned: Retroflexion of the uterus, chronic hyperplasia of the uterus, chronic endometritis, laceration of the cervix uteri, pelvic peritonitis, or rather its results, prolapse

of uterus, syphilis, and chronic nephritis.

When we find a retroflexed pregnant uterus it will be necessary to replace it to its normal position with the greatest possible care and gentleness. This having been accomplished we may congratulate ourselves in having in all probability prevented an abortion. The same can be said of a complete prolapsus. When, however, the fifth month of gestation is over the uterus can no longer be replaced, and it either means death to the mother or artificial interruption of gestation. In the other instances of which I have spoken, our treatment must be directed to the peculiar condition before conception takes place. An exception to some extent is syphilis and chronic nephritis. A lady of this town had aborted fourteen times in succession, and became mother of a living child after an operation for deep laceration of the cervix. Only the other day I was told of a woman who gave birth to a living and healthy child after having aborted six times before the third month of gestation. The patient was known to have syphilis, and was under anti-syphilitic treatment for five months.

I believe after longer observation we shall be able to discard the term habitual abortion, since we shall find a cause for all these cases. In the treatment of threatening abortion we are first confronted with the very important question: Are there still well-founded prospects of preventing an abortion, or is it beyond our reach? If we have decided for the former the patient must be instructed to keep quiet on the first appearance of a bloody discharge or bearing-down pain, her lower bowel should be kept emptied, her diet a bland one, sexual intercourse stopped, and opium or cannabis indica administered.

When shall we know that our endeavors are in vain? The safest symptoms are when the cervical canal has dilated sufficiently to allow the finger to touch the ovum, or when the os internum is dilated to such a degree that the cervix and the corpus uteri shall form one cavity. We would also know that our endeavors are in vain when pieces of the decidua have been passed, or when there is a fetid discharge from the uterus. The latter is a sure symptom that some parts of the ovium have undergone necrosis and death.

As a rule an abortion is sure to take place when the patient has lost blood for a length of time in large quantities, accompanied with labor-pains. I have seen pregnancies continue, however, when the patients had one or two large hæmorrhages, as well as I have known a child go to full term when there was a bloody mucous discharge for several weeks. When we feel certain that the product of conception will be cast off, then it becomes our duty to relieve the patients as soon as possible so as to prevent their undergoing the ordeal following retained secundines.

If we have reason to believe that the ovium is intact and the uterus is doing its work well, and gradually emptying itself, then we had better not be meddlesome. We can render the uterus valuable assistance in its endeavors by a large, hot vaginal douche or a tampon. A large, hot rectal injection will often be of signal value. Occasionally I was forced to assist the uterus by instrumental dilatation of the os externum, and then I used Goodell's dilator with much satisfaction.

So long as the ovum is intact, the uterus will probably have no difficulty in forcing it out, and when it lies in the cervical canal it can be re-

moved easily by the finger with a sweeping motion. At times we will be confronted by a severe hæmorrhage, often of an alarming character. Here an iodoform gauze or a clean cotton tampon will do its work well. It should be introduced through a large cylindrical, or a Sims speculum, and care be taken to plug the vagina around the cervix and os very thoroughly. If the uterus itself is to be plugged it can only be done through a Sims speculum, the patient lying on her back, with the hips over the lower end of a table. The vagina and cervix should be thoroughly cleansed, the speculum introduced, and the cervix drawn down with a tenaculum forceps. A narrow pair of dressing forceps pushes a long narrow strip of gauze into the uterus until this organ is filled.

This is by all means the safest and surest remedy. I would warn against the use of all styptics on account of the great danger of sepsis. Occasionally we will succeed in delivering the ovum in toto by a combined abdominal and vaginal compression performed in the following way: Two fingers of the right hand are placed anterior to the cervix in an anteversion and posterior to the cervix in a retroversion, while the left hand seeks the uterus from the abdomen and on its posterior or anterior surface, as the case may be, makes pressure in the direction of the fingers in the vagina. When the ovum has been broken, or a finger once introduced into the uterine cavity, then an instrumental delivery with curetting of the endometrium becomes a necessity. It becomes a life-saving operation when the patient shows signs of sepsis. In these cases it is my custom to operate in the following way: The patient being under the influence of an anæsthetic, is placed in the lithotomy position on

a table with the hips well down over the lower end. A Kelly perineum pad or ordinary oil cloth is placed under the patient, so that all fluids are directed to a pail or bucket below. The vulva and vagina are then thoroughly washed with soap and hot water, and disinfected with a hot solution of mercuric bichloride, 1 to 4,000. A Sims speculum is now introduced and held by an assistant, who also holds the right leg of the patient and the irrigating tube, while the left leg is held by a second assistant, who also administers the anæsthetic.

The anterior lip of the cervix is caught up with a tenaculum, or what is better, a tenaculum forceps, and drawn down somewhat so as to straighten the canal. The canal is now thoroughly dilated, if necessary, by an Ehlinger or Goodell dilator, and the cavity of the uterus thoroughly curetted with a sharp instrument, or else, if large pieces of tissue were left, they should first be removed with a broad-bladed dressing forceps. There is very little danger of wounding the uterus unless sepsis is far advanced. Under these circumstances we must manipulate very carefully, for I have seen a curette pushed right through the fundus of the uterus into the peritoneal cavity. The horns and fundus must receive our special attention in curetting, as these are the most difficult parts to clean.

During all this a constant stream of a solution of mercuric bichloride, 1 to 4,000, is poured upon the cervix. When the uterus has been thoroughly curetted the cavity is also irrigated with the same solution, preferably through a return catheter. The whole procedure of curetting and irrigating should be repeated to assure ourselves of the successful accomplishment of our object. Let me here

say that it must be done systematically; thus the anterior wall, the posterior wall, the right horn, the left horn, and the fundus are scraped in the order mentioned.

As the uterus has now been thoroughly cleansed the vagina is also irrigated. The fluid remaining in the vagina is mopped up with a piece of iodoform gauze, and a strip of the same material is laid into the cervical canal and to the fundus of the uterus for drainage. The tenaculum forceps can now be removed and the vagina loosely filled with gauze. If there is reason to fear hæmorrhage, and there is none, if we have removed the chorion and decidua thoroughly, it is well to fill the uterus tightly with gauze, which must be done with one long strip. In either case the gauze is removed in twenty-four hours. If the patient has no fever a vaginal douche of one per cent. solution of carbolic acid may be ordered. If she still has fever, the uterus should be irrigated again, and a strip of gauze again inserted into the cavity. Great care should be taken that the strip of gauze is not too wide, otherwise it will be the means of blocking up the uterine discharge.

Instead of reapplying the gauze, we may choose to irrigate the uterus every four hours with sterilized water, or a solution of mercuric bichloride of 1 to 10,000, until there is no more fever, or until we are satisfied that the germs have gone beyond the cavity and mucous membrane of the uterus.

From what has been said I would draw the following conclusions:

Since an abortion is a pathological and not a physiological condition, as is a birth at time, it must be treated on other principles than the latter. In many cases our interference becomes necessary because we deal

with conditions which favor a retention of secundines, as, for instance, a broken ovum, a displaced, a septic or otherwise diseased uterus. When we can foresee the probability of a retention we must use such efforts as will further its expulsion, provided it can be done by such means as will not produce injury to the mother. In this condition, like in many others, to do a thing half is worse than not to do it all.

In a majority of cases a clean finger is the best instrument. However, if the whole ovum and decidua have not come away, then the forceps and the sharp curette find their places, the latter for thorough removal of the uterine decidua.

A temperature of 101° F., or above, is always a distinct indication for an immediate cleansing out of the uterus. The vulva, vagina, cervix, instruments and hands, should be made thoroughly aseptic before an operation is permitted.

In septic cases large, hot antiseptic intra-uterine injections should follow the cleansing out of the uterus, and the uterus should be drained by gauze. Let me also say that I have never seen any good come from ergot given previous to emptying the uterus. (*Medical Record*, 1894).

TECHNIQUE OF VAGINAL HYSTERECTOMY. BY GEORGE M. EDEBOHLS, M. D.

There is a growing tendency among gynæcologists at the present time to attack by way of the vagina pathological conditions of the female pelvic organs formerly approached by cœliotomy. The chief arguments advanced in favor of the new departure are: the lesser shock of the vaginal operation, the absence of an abdominal cicatrix, and the avoidance of a possible hernia. The principal

disadvantages of the vaginal operation lie in the uncertainties of diagnosis previous to operation and in the greater difficulties of the operation itself. The uncertainties of diagnosis we can scarcely hope ever to entirely overcome. In many, though not in all, cases of uncertainty of diagnosis prior to operation, the diagnosis may be made after incision of the pouch of Douglas with practically equal facility as after opening the abdomen above the pubis. The technical difficulties of the vaginal operation will probably become less as the operation is more frequently practised and as we become more familiar with one or the other or all of the various techniques.

Those who now perform *cœliotomies* for various purposes so successfully have attained their present expertness in the school of experience. Just so it is and will be with vaginal hysterectomy. By the vaginal operation, as the term is here used, is not meant simple incision or puncture, with or without drainage, or aspiration of pathological accumulations in the pelvis. The term is applied in bringing the vaginal operation in competition with the suprapubic operation in the performance of *oöphorectomy*, *salpingectomy*, and *hysterectomy*, single or in any given combination.

This paper deals with the technique of vaginal hysterectomy with and without added *salpingectomy*, *oöphorectomy*, or *salpingo-oöphorectomy*. Vaginal hysterectomy will first be considered by itself, to be followed by a few remarks upon the added procedures.

The methods of vaginal hysterectomy are three in number :

1. Serial ligation of the broad ligaments.
2. The clamp operation.

3. Enucleation, with ligation of bleeding vessels only.

Each of the three methods may be performed with or without *morcellement*. The general rule should be to remove the uterus entire, whenever its size permits of its delivery as a whole, through the vagina. *Morcellement* under these circumstances, except in cases of malignant disease of the cervix, is to be considered an inferior procedure ; it comes into play only in cases in which the uterus is too large to be delivered in one piece through the vagina. The writer has had occasion to remove the uterus through the vagina for probably every indication on which the operation has been done, and has had personal experience with each of the various methods of vaginal hysterectomy.

The following descriptions of the various methods is based upon this personal experience : Vaginal hysterectomy by whatever method, and for whatever purpose, is best practised with the patient in the lithotomy position. The vagina must, of course, first be cleansed and disinfected as thoroughly as possible. The writer employs for this purpose scrubbing with *mollin* containing 10 per cent. of *creolin*, followed by sublimate douches. A perineal retractor is next inserted. The writer makes use of the speculum bearing his name. The metal-weighted speculum of the French school and Simon's speculum answer the purpose equally well. The latter has the disadvantage of requiring an assistant to hold it. Lateral retractors are a necessity ; the anterior retractor I have thus far always been able to dispense with. An electric forehead-light will be found very useful in illuminating the depths of the pelvis. Until the peritoneum is opened irrigation is used to remove blood and *débris* and keep clear the operative field. After the

peritoneum is opened, mopping with sterilized gauze, either in the form of serviettes or sponges, is employed. If the cavity of the uterus is known or suspected to contain pathogenic germs the cervix is dilated and the uterine cavity thoroughly washed with a strong (1:2000) sublimate solution. It is then packed with antiseptic, iodoform or sublimate gauze.

Cases of malignant disease of the cervix which have progressed to ulceration, require circumcision and removal of the entire broken-down mass, after which the instruments thus far used are discarded. The vagina is again washed, disinfected, and the hysterectomy completed with safely sterilized instruments and re-disinfected hands. After asepsis of the vagina and uterus have thus been secured, the first step in the operation, except in cases in which the uterus is removed for malignant disease, should consist of an exploratory incision of Douglas' sac. This incision is made for the purpose of either establishing or confirming the diagnosis. It is only dispensed with in cases in which Douglas' sac is so obliterated by adhesions that the latter cannot be safely separated in their entirety at this stage of the procedure. The next step of the operation, by whatever method attempted, is circumcision of the cervix. Except in cases of malignant disease this circumcision should be made as near as practicable to the lower end of the cervix. Hæmorrhage from the vaginal arteries is thus reduced to a minimum. The circumscribing incision must be carried low enough, at least, to avoid the bladder anteriorly. Posteriorly it should be continuous with the incision into Douglas' sac. The incision is carried clean through the mucous membrane into the submucous connective tissue. Up to this point

the procedures already described are common to all the various methods of vaginal hysterectomy. From this stage on each method requires separate description.

1. *Serial ligation of the broad ligaments.* After separating the cervix from its surroundings for a short distance, so as to allow the tissues to retract somewhat, the bladder is dissected, bluntly or with scissors, from the anterior surface of the uterus until the vesico-uterine pouch is reached. In separating the bladder, always hug closely the anterior surface of the uterus. If it can be easily done at this stage the anterior peritoneal pouch is opened and the opening enlarged laterally by tearing. Ligation of the base of the broad ligaments, including the uterine arteries, is the next step. To insure inclusion of the entire arterial supply the armed ligature-carrier is best carried into Douglas' pouch and made to pierce the broad ligament from behind forward, emerging in the anterior wound close to bladder. Care must, of course, be exercised not to include the ureters. After the ligature is tied on both sides the tissues between the ligatures and uterus are severed with the scissors, and the uterus is dragged farther down toward the vaginal outlet. The next section of the broad ligament is now tied in a similar manner on either side and cut with scissors between uterus and ligature. The third ligature generally reaches to the top of the broad ligament, including the tube and round ligament on either side. A clip of the scissors between the topmost ligature and the uterine cornu on either side will liberate the uterus, which is now removed. If it is desired to remove tubes and ovaries with the uterus, they are drawn down, either after removal of the uterus or with the latter, and the topmost

ligature on either side is applied to the broad ligament outside of the tubal ostium. Tubes and ovaries are then cut out between the ligatures.

2. *The clamp operation* differs in no wise from the method of serial ligation of the broad ligaments, except that hæmostatic forceps of various shapes and sizes, according to the fancy of the operator, take the place of ligatures. The uterus, with or without the tubes and ovaries, is cut out between the clamps applied to control hæmorrhage from the broad ligaments on either side. The handles of each pair of forceps are tied with silk to prevent their opening, and the clamps allowed to remain from twenty-four to forty-eight hours, their handles being wrapped in antiseptic gauze.

3. *Enucleation with individual ligation of bleeding vessels.* After circumscribing the cervix by incision it is seized with strong volsella forceps and drawn well down; or a stout silk ligature may be passed through the cervix to act as a guy-rope in drawing it down. The uterus is freed from its surroundings by blunt dissection, aided when necessary by incisions with a hysterectomy knife or scissors. The author's preference is for the scissors aided by a tenaculum. The tenaculum is hooked into and draws taut the tissues immediately adjacent to the uterus, while the scissors divides them as close as possible to that organ. After a fair and patient trial of the hysterectomy dissector the writer has been unable to accustom himself to its skilful use. Blunt dissection, aided when necessary by an occasional clip of the scissors, is thus proceeded with until the origin of the tube from the uterine cornu is reached on both sides, the peritoneum having, as already stated, been freely opened anteriorly and posteriorly.

Two cardinal principles are involved in the successful performance of vaginal enucleation of the uterus. The first is to carry the dissection as close to the uterus as possible. Hæmorrhage is thus reduced to a minimum. The uterine arteries as they approach the uterus divide rapidly into smaller and smaller tortuous branches—the curling arteries of the uterus—which finally penetrate the uterus as arterioles of the smallest calibre. By dissecting very close to the uterus we divide only these arterioles or capillaries, and the slight oozing from them almost immediately ceases spontaneously. In working further away from the uterus, larger vessels, requiring ligation, are divided.

The second cardinal principle involved is always to keep your immediate work well in view in the centre of the field of operation; to seize with forceps any spurting vessel that may happen to be divided, and to immediately secure it with a slender catgut ligature. It will not do, however, to tie the ligature around the artery in the usual way. The danger of retraction of the artery and slipping off of the ligature is too great, and when the artery has once retracted outward into the folds of the broad ligament, it may become a serious and difficult task to again secure it. To be on the safe side, the transfixion ligature (*Umstechungsligatur*) must be employed. The bleeding mouth of the artery is seized with forceps and slight traction made upon the vessel. This puts the tissues about the artery upon the stretch, and a needle carrying the ligature is passed underneath the artery, piercing in a part of its course the connective tissues surrounding the vessel. The ligature is then tied upon the side of the artery opposite to that on which the connective tissue has been pierced. A ligature thus tied cannot slip off.

If it is desired to ablate the tubes and ovaries, the same blunt dissection, aided when necessary by the scissors, is carried close to the tubes and ovaries until the infundibulo-pelvic ligaments are reached. Divided bleeding vessels are separately secured by fine catgut ligatures. In all clean cases closure of the peritoneum is the next step of the operation, except in the clamp operation, in which the peritoneum has been necessarily or accidentally defiled, iodoform gauze tamponade of the lower pelvic cavity is practised,

The peritoneum is closed by a running Lembert suture of catgut. This is an easy matter when the uterus alone has been removed. When the tubes and ovaries have been ablated closure of the peritoneum becomes a more difficult undertaking; it is best accomplished by beginning at the infundibulo-pelvic ligament on either side and working downward toward the median line, where the two sutures meet and are tied to each other. A strip of iodoform gauze is loosely placed in the raw space between the vagina and the closed peritoneum. A little more of the same gauze is placed in the vagina, and the operation is completed.

Having finished the description of the routine operation according to each of the three methods, a few general considerations relating to the modifications of technique, to meet complications and the exigencies presented by the various indications upon which the operation is performed, are in order.

A narrow vagina need not necessarily contraindicate vaginal hysterectomy. The required room can be obtained by incision of the vagina on both sides, along its whole length if necessary. These incisions are best made in the postero-lateral direction. After completion of the operation the

vaginal incisions are closed by suture.

In cases in which the uterine cavity contains infectious material the cervix may be closed by suture as a precaution additional to the sublimate irrigation and gauze tamponade of the uterus, prior to proceeding with the operation.

Should the bladder happen to be wounded, the injury is immediately repaired by suture. A running suture of fine chromicized catgut in two tiers, the deep tier extending down to but not penetrating the mucous membrane of the bladder, will answer the purpose. Frequent catheterization, or a permanent catheter, should form a feature of the after-treatment in cases of wounded bladder.

Adhesions do not contraindicate vaginal hysterectomy: they merely render it somewhat more difficult of performance. Separation of adhesions is effected in the same manner and on the same principles that obtain in celiotomy.

The intestines are best kept out of the way during operation by elevation of the pelvis, when they gravitate toward the diaphragm in the same manner as obtains in celiotomy in the Trendelenburg posture. The writer's operating tables, both stationary and portable, have proved very serviceable in this direction.

The operation may frequently be facilitated by inverting the fundus of the uterus into the vagina, either through the anterior or the posterior opening in the peritoneum. When this course is considered desirable, and the uterus cannot be readily turned down by the fingers, our object may be accomplished by "climbing" up the anterior or posterior surface of the uterus with the aid of two tenacula forceps. The uterus is grasped at an accessible

part of its anterior or posterior surface by the first forceps. Traction upon these brings into view a higher part of the uterus which is grasped by forceps No. 2. This releases forceps No. 1, which in turn grasps a higher part, and so on until the fundus appears and is pulled down into the vagina.

The one great disadvantage of the vaginal operation lies in the fact that it is sometimes very difficult to remove the tubes and ovaries when such removal is indicated. This difficulty and indication obtain chiefly when the diseased adnexa are adherent high up in the pelvis. The atrophy and shrinking of the tubal and ovarian attachments following the menopause may also render it difficult to bring these organs down into the field of operation for removal; their removal under this circumstance is, however, fortunately but rarely called for.

The after-treatment of vaginal hysterectomy with closure of the peritoneum is a very simple matter. The urine is drawn until the fourth day, when the gauze is removed from the vagina. After that the patient uses the bed-pan in emptying her bladder, receiving a vaginal douche of 1:3000 sublimate immediately after each urination. When the peritoneum has been left open and tamponaded with iodoform gauze, this gauze is removed on the fourth day, and a small quantity of fresh iodoform gauze introduced. This is removed on the seventh day, after which the vagina is douched after urination, as in the cases with closure of the peritoneum. Patients may sit up from the ninth or tenth day on, and generally leave the hospital at or before the end of three weeks after operation.

The three methods of vaginal hysterectomy above described may be

properly designated as the German, the French, and the American. The Germans, almost to a man, practise serial ligation of the broad ligaments. The prominent exponents of the French school, following the lead of Péan, swear by the clamp. Enucleation with simple ligation of bleeding vessels, although probably practised in isolated instances elsewhere, first became established as a routine procedure in our own country, where it is rapidly gaining adherents. To Pratt, of Chicago, belongs the credit of having by his practice demonstrated the practicability and value, and by his teachings and writings disseminated a knowledge of the method which justly bears his name. As already stated, the writer has practised each of the three methods. The clamp operation he soon abandoned, as to his mind eminently unsurgical. He has no further use for it, and will not again leave a clamp in the body except in the dire necessity of being unable to secure a bleeding point by ligature or torsion. Serial ligation of the broad ligaments presents the serious objection of unnecessary constriction of vital tissues richly supplied with nerves, blood-vessels, and lymphatics. Ligation is required merely to check hæmorrhage, and this object can be accomplished by simply tying the bleeding vessels; all constriction or crushing of tissues beyond this is uncalled for, harmful and illegitimate. Vaginal hysterectomy by serial ligation of the broad ligaments is indicated only in cases of malignant disease in which we wish to give the uterus as wide a berth as possible. Enucleation of the uterus, with ligation of bleeding vessels only, appeals to my mind as a surgically ideal method of hysterectomy, suprapubic and vaginal. All my cases operated upon after this method, one abdominal and nine vag-

inal hysterectomies, have made good recoveries. The first vaginal hysterectomy bears date of May 18, 1894. (*American Journal of Medical Science, January, 1895*).

VAGINAL FIXATION IN THE TREATMENT OF RETRO-DISPLACEMENT OF THE UTERUS. BY CLINTON CUSHING, M. D.

For the purposes of this paper it is assumed that a retroflexion or a retroversion of the uterus is a pathological condition that requires treatment on account of pain, both local and reflex, or on account of disturbed function, such as dysmenorrhœa, menorrhagia, or sterility, and while it is true that in a small proportion of cases of retro-displacement in unmarried women, no untoward symptoms are manifest, the rule holds good that no woman may expect to long remain well unless her uterus is somewhere near its normal position.

As far as keeping the uterus in its normal position is concerned, and thereby relieving the disagreeable symptoms, I have successfully treated many hundred women with the various modifications of the Hodge pessary. Many of these women have been under observation for from three to six years, and at the end of from two to three years the pessary has been removed as an experiment, to determine if the uteri will retain its normal position without artificial support. Certainly not five per cent. remain normal after removal of the pessary. In all cases the pelvic floor has been repaired where the woman has suffered injury to the part. The vaginal pessary then, in the treatment of retro-displacements of the uterus, must be placed in the category with wooden legs, spectacles, and ear-trumpets; mainly as an aid to render life more tolerable and

comfortable, and not as a means for permanent cure.

I have done Alexander's operation several times but have not been successful with it, and it has never become popular among operators, probably for the same reason.

I have opened the abdomen and fastened the body of the uterus to the anterior abdominal wall in at least twenty cases, mostly in connection with the operation for the removal of diseased tubes and ovaries, and have been pleased with the results. How large a proportion have proved an absolute cure I am unable to say, for many of the patients came from long distances and were not again seen after their convalescence, but among those who have remained under observation the results have been satisfactory. I do not know of a case that has since borne a child, and cannot, therefore, say what effect pregnancy would have on the fixation. Opening the abdomen for the purpose of curing retroversion seems to most patients, and to most doctors, a severe and unwarrantable procedure, and surely there ought to be little wonder that this view should be taken.

While in Berlin last summer, Prof. August Martin kindly demonstrated for me an operation that is called vaginal fixation of the uterus, which strongly impressed me on account of its simplicity and because it fulfilled so completely the indications.

The woman is placed in the lithotomy position at the edge of the table, a Simon's speculum introduced, the perineum retracted and the cervix drawn down to the vulva. A strong uterine sound is introduced into the uterus and the organ held by an assistant in a position of anteversion. An incision is made with a knife directly forward in the middle line from the cervix toward the urethra

for two inches, the incision extending only through the vaginal tissues. The vagina is separated from the bladder on either side of the incision for half an inch, and the bladder is then pushed off the anterior wall of the uterus up to the peritoneal reflexion. This part of the operation is much facilitated by seizing the anterior wall of the uterus with a bullet forceps, drawing it down and steadying it. The bladder is then easily pushed upward and forward out of the way, a suture of silkworm gut is now introduced through the muscular wall of the vagina on one side of the incision, an inch and a half from the cervix, then through the anterior wall of the uterus, and out through the muscular wall at the vagina on the opposite side. The ligature is then tied and buried. A second suture is introduced in like form a half inch lower down, and the incision in the vagina closed throughout with silkworm gut.

The result is that the anterior wall of the uterus is drawn over and fastened to the anterior wall of the vagina, the bladder being pushed upward and forward.

During the past eight months I have performed this operation twelve times, and have been greatly pleased with the results. Most of the operations have been done in conjunction with the repair of the cervix and perineum. Given a case of retroversion with a laceration of the cervix and perineum, accompanied with endometritis, the following plan is pursued: The woman is kept under observation for two or three weeks before any operative procedures are undertaken. The uterus is carefully and thoroughly replaced while the woman is in the knee-elbow position, glycerine tampons are used, and this process repeated every 48 hours. As soon as it can be done safely a well-

fitting Hodge pessary is introduced and the uterus kept well forward. Thus the question of the mobility of the uterus and the condition of all the pelvic organs and tissues is clearly defined.

If all goes well, at the end of three or four weeks, the patient is properly prepared by rectal and vaginal douches, and the uterus is thoroughly curetted, the cervical rents freshened, and silkworm gut sutures introduced but not shot.

The vaginal fixation is next done, and afterwards the perforated shot, each with a small tag of black silk attached, are run up on the silkworm gut sutures in the cervix, compressed, and the sutures cut off flush with the shot. The perineum is then repaired after Tait's method, which I am firmly convinced is far the best, the silkworm gut and the perforated shot with black silk tags being again used. The next step I consider of importance, as it has much to do with the success of the plastic operations, and the ease and comfort of the patient during convalescence.

To each ounce of fresh well-made zinc ointment is added a grain each of morphine and cocaine. Two teaspoonfuls of this ointment are introduced into the vagina and thoroughly spread over the parts with the finger. A small teaspoonful is also introduced into the rectum. By this plan the local smarting and pain are rendered tolerable, and as the ointment escapes from the vagina the new perineum is kept covered and protected from the urine, none of which can pass into the vagina. Except in cases of offensive vaginal discharge, accompanied by fever, no vaginal injections are permitted for eight days, but the external parts are frequently douched with warm carbolyzed water, which is followed by an application of the ointment over the new perineum.

On the eighth day a vaginal injection of carbolyzed water is given, and now by catching up the tag of black silk thread attached to each shot, the shot and ligature are brought into view. One side of the ligature is cut, the loop removed with the least possible pain to the patient, and without disturbing the newly united surfaces. Ten days later a small Sims speculum is introduced and the stitches in the vagina and cervix are removed. In one case only has suppuration of the buried sutures occurred, but notwithstanding this, the union between the vagina and the uterus remains firm, and the uterus retains its normal position. I have thought best in all cases to have the patient wear a small Hodge retroversion pessary for the first three months after the operation, in order to assist in keeping the uterus well forward until union becomes firm at the site of the buried sutures.

Manifestly if the uterus can be kept sufficiently far forward, so that the pressure of the small intestines is against the posterior wall of the organ, it will require but little force to keep it in place. If the uterus and vagina are made aseptic there should be no more danger from this operation than from any other of the plastic operations about the vagina.

Injury to the bladder would appear to be the most probable accident, but with a little care and the exercise of ordinary skill this is easily avoided. What has struck me as the most remarkable thing about the operation is that the patients do not complain of any irritation or pain about the bladder, which would naturally be expected when it is remembered that a considerable dissection is made of the tissues lying between the vagina and the bladder, and the uterus and the bladder.

It is yet too soon to decide upon

the real merits of this procedure, but judging from the good results observed thus far I think we are warranted in giving it a further trial. I do believe that the operation will prove successful where the uterus is large and heavy, or where the woman has suffered enough injury to the pelvic floor to permit the pelvic contents to sag much, and I therefore strongly advise any one who contemplates this operation to first replace and keep in position the uterus for a month; then, when fixation is performed; to curette this organ thoroughly if advisable; to repair the cervix and pelvic floor should this be required; and to keep the uterus in a state of anteversion, by means of a pessary, for several months after the operation as a matter of safety.

Several years ago in a communication to this society, I advocated the claims of catgut as a suture. I now only use catgut for ligature when the parts are infected by pus. In plastic surgery it is not as reliable as silk-worm gut, which I now invariably use for such work.

In the preparation of catgut, I have recently carried out an idea that appears to me to be of considerable practical importance. Every one who has used catgut for ligatures must have been impressed with the fact that as soon as the catgut gets wet with water or blood, it becomes slippery, and the first knot does not hold well while the second is being tied. Especially true is this when working in dark corners where the view is obstructed by blood, as in the bottom of the pelvis following an abdominal section.

I now prepare catgut in the following manner: The coils of gut are first soaked in sulphuric ether for ten days, in order to render them aseptic. They are then put into a pint of pure alcohol in which has been dissolved

an ounce of common rosin. By so doing I have found that the animal ligature whether wet or dry is sufficiently sticky to retain the first knot tied, without slipping, until the second is placed in position, and I know of no objection to the alcoholic solution of the rosin. This may seem a trivial matter, but I doubt not all will agree that many of our aids in surgery are in themselves trivial, but they make just the difference between failure and success.

The objection might be raised that by this operation we produce anteversion of the uterus and therefore a pathological state. I believe the so-called anteversion of the uterus is the normal position of that organ when the bladder is empty, and that the various symptoms which have been ascribed to the so-called anteversions are due to disease of the structure of the uterus, or to displacement of all the pelvic contents downward on account of injury to the pelvic floor, or to disease of the ovaries or bladder. For the last ten years, therefore, I have given up treating the so-called cases of anteversion as such, and have succeeded in giving relief in such cases by curing endometritis and subinvolution, and by repairing injuries from childbirth.

I am the more inclined to call the attention of the society to the operation of the vaginal-fixation because I have seen very little regarding it in the medical literature of the country.

Duhrssen of Berlin, who was one of the first to perform the operation, reports 140 cases without any fatal result, and with a permanent cure of ninety per cent. His method of operating varies slightly from the one described, inasmuch as he makes the incision in front of the cervix, transversely of the vagina instead of longitudinally. The operation described

is essentially that of Mackenrodt, who is assistant to Prof. Martin, and it was Mackenrodt who read the first paper on the subject.

The operation is manifestly contraindicated where the uterus from any cause is large and heavy, or where adhesions prevent its being easily placed in a state of so-called anteversion, for any dragging upon the buried sutures would certainly cause them to cut out. The operation is equally applicable to cases of retroversion or of retroflexion. (*Transactions of the American Association of Obstetricians and Gynecologists*, 1894.)

THE IMPORTANCE OF THE EARLY
RECOGNITION AND TREATMENT
OF SEPTIC PUERPERAL ENDOMETRITIS. BY EDWARD J. ILL, M. D.

No accident causes the physician more mental anxiety and shakes his reputation more than the occurrence of puerperal septicæmia in his patients. How important this subject is to me will be apparent to you when I say that I have been called upon as many as five times in a week to see cases in question for five anxious and unfortunate medical brothers. Ever since the observations of Semmelweis on the contagiousness and infectiousness of puerperal fever have been accepted, it has been the aim and object of the obstetrician to avail himself of every means which would reduce the number of cases in his practice. Every obstetrician should feel that in a very great majority of cases he is the cause when his patient sickens with this disease. The sooner we recognize this the better for our wards and the better for the profession. Just as the surgeon knows that something has been overlooked in an operation when he gets septicæmia, so the ob-

stetrician should seek for the cause of his failures.

Please remember I have said that in the majority of cases the obstetrician is to blame. There are times, circumstances, and conditions when it becomes unavoidable, and therefore beware of calling a professional brother unclean.

Next in importance to the prevention of this disease is its early recognition. It is this and its early treatment that I am especially anxious to hear you discuss. It is disastrous to hide our fears under the disguise of malaria and treat with a handful of quinine pills, or, as is so common now, under the name of *la grippe*. Let us immediately know what the symptoms mean and how to combat them, as a delay of twenty-four hours may settle the patient's fate and make her an utterly hopeless case. It is not my purpose to give you a lengthy discourse on the pathology of the disease; suffice it to say that the presence of pyogenic bacteria in the genital tract is absolutely necessary for the production of the disease. I do not wish to go into any detail as to the symptoms of the disease under consideration; allow me only to recall what at the bedside is sufficient for an immediate interference.

When a woman, on the second or third, possibly the fourth day after her labor, has a sudden chill and a temperature of *over* 101°, may be 104°, with an anxious expression of the face and a rapid, full pulse; when her temperature before this chill was suspicious at 100°; when possibly her uterus at a bimanual examination is sensitive on pressure, but movable, and the broad ligaments are not the seat of tumors; when the cervical canal is wide open and there is a fetid and fishy odor to the finger as it is removed from the vagina, then I would take the necessary steps for

such treatment as I will speak of below. Likewise I should say that a suppression, or rather a retention of lochial discharge, needs a similar attention. To assure ourselves of the diagnosis it will be well to eliminate by careful examination a pneumonitis or symptoms referring to it. A lymphangitis of the breasts due to fissured nipples must be equally carefully eliminated. An acute indigestion or a rectum loaded with fecal matter will often produce a passing rise of temperature, but not a chill; and a saline cathartic with a diaphoretic — say ipecac — will clear up the case. With equal care we must endeavor to eliminate old inflammatory masses on either side of the uterus in the broad ligaments. We may have an old imprisoned abscess or pus tube which has produced new inflammatory and septic symptoms and needs quite different treatment from that of which this paper will speak.

If we still feel uncertain, and allow several hours to pass after the initiatory symptoms and find the temperature no lower, not having given an antipyretic to misguide us, we may safely go on with what seems to me the proper and, when carefully carried out, a safe treatment. During the last ten months I have seen about fifty cases of septic endometritis, one-half of which were at term, with but one death. This case should hardly be considered, since the patient was in a semi-comatose condition from ptomaine poisoning and had a temperature of 104° to 105° for a week. She died in twenty-four hours after I saw her. I do not know of any cases that need our attention so much and so constantly.

If we agree that the disease is produced by pyogenic germs, we will also agree that the fewer there are in the uterus and vagina the more likely will the patient be able to

withstand their onslaught. We will further agree that the healthier the tissue the less chance will the germs have to enter the circulation. The tissue in the uterus will remain healthy in proportion to the shortness of time in which the germs are allowed to remain in the uterus and the possibility of preventing their growth. This being the case, it must be our endeavor to use those means which experience and science have taught us will destroy or prevent germ growth, and to use those means early, before the infection has penetrated into the deeper layers. We may not and do not always succeed. It is easier to prevent infection than to cure it, and a good deal depends upon the resistance of the patient.

If the diagnosis is once established that a cavity, let it be the nasal cavity, the ear, the pleura, or the peritoneum, is filled with putrid matter, then I think few would deny the propriety of removing this and keeping the cavity clean. Why not the uterus?

If the cleansing is done early and thoroughly it is evident that the tissue will be less diseased and more ready to withstand the onslaught of the few septic germs remaining. What failures I have had were all due to late interference. The use of quinine, antipyretics, aconite, alcohol, etc., is not going to cleanse the uterus of a mass of filth.

There may be a difference of opinion as to how such a uterus can or should be kept clean. In my own experience the best and safest method is as follows: The patient should be placed under an anæsthetic, if she be at all sensitive, for the first operation. She is then put on a table, with a Kelly perineum pad or an ordinary rubber cloth under the hips. The buttocks are drawn well over

the lower edge of the table and the thighs flexed on the abdomen. All the outer parts, as well as the vagina, are thoroughly cleansed with soap and hot water and rinsed with a solution of mercuric bichloride of 1:5000. A perineal retractor having been introduced, the anterior lip of the cervix is caught with a tenaculum forceps and drawn downward and forward. This has the effect of straightening the canal, and not infrequently a gush of ammoniacal grayish-red fluid will be seen to escape from the os. From the moment the speculum is introduced a stream of the bichloride solution is constantly kept flowing over the parts, vulva, vagina, and cervix. If the uterus is open, as it usually is, a long glass tube bent three inches from the extremity, or a large-sized Fritsch-Bozeman catheter, is introduced and the cavity of the uterus irrigated with the same solution, the eye closely observing the outflow of the fluid, as it is most important that its escape shall be unobstructed. As soon as the fluid returns clear a broad curette or the Rheinstädter irrigating curette is thoroughly but carefully applied to the whole endometrium to remove all clots of blood and flakes of membrane. If the case is of short duration there will not be a great flow of blood, but a case of several days' standing will often bleed profusely. At times shreds of membrane which the curette misses are easily removed by a broad-bladed forceps. I would warn against the use of the ordinary narrow uterine dressing forceps, as being entirely too pointed and therefore dangerous. Unless a Rheinstädter curette is used a constant current of the solution is kept pouring over the cervix and vagina. When we are satisfied that all has been removed the uterus is again thoroughly irrigated with the above

solution. When I can get sterilized water I prefer it for intrauterine irrigation. The bloody water is now carefully wiped from the vagina and the uterine cavity *loosely* filled with a long, narrow strip of iodoform gauze. This strip should be sufficiently long not only to fill out the uterus but the vagina also. After the uterus has been filled the vagina is dusted over with iodoform, carefully covering all wounds of this organ, and the vagina also packed with the gauze. This dressing insures complete drainage, unless the cervical canal and uterine cavity have been packed as one would for hæmorrhage. After twenty-four hours, or, if the fever has completely subsided, in forty-eight hours, the dressing is removed. A complete subsidence of the fever is not unusual. If the fever rises above 101.5° , irrigations of sterilized water are used every four hours, and once a day the bichloride solution. As soon as the temperature is below 101° nothing is done. When circumstances are such that the patient cannot be reached often, I advise the injection of fifteen grammes of a five-per-cent mixture of iodoform and sterilized glycerine high up into the cavity of the uterus. Thus I have been obliged to treat patients from one to twenty-seven days. All vaginal or cervical wounds, especially when covered with diphtheritic patches, I treat by covering them with iodoform or the iodoform and glycerine mixture. I would warn against cauterization with the chloride of iron for sloughing or diphtheritic wounds in the vagina.

This procedure I can recommend to your consideration. There are some who are sarcastic enough to say they have seen patients get well in spite of such treatment. To such I should say, and I know of them personally, that at their hand I wonder

any sort of surgical case gets well. We hear from others that they have known severe cases to get well without such so-called heroic measures. To these I can only say that the same thing can be said of therapeutic efforts, as we have no means by which to make control experiments. It is certainly not with the desire of doing something that I would let the patient undergo such treatment. To say that there are no dangers or accidents to be guarded against would be misrepresenting facts; and I would be the last man to recommend this method to a rude or careless hand. I like to avoid an antiseptic intrauterine irrigation when I can safely do so. I am especially opposed to carbolic acid, as I have several times, and twice in the same patient, seen carbolic acid solutions produce violent convulsions and complete insensibility lasting for an hour or more.

The glass tube or Rheinstädter curette must be thoroughly emptied of air before its introduction into the uterine cavity. The hæmorrhage in early cases is rarely severe and ceases when all foreign matter has been removed. It always indicates a partial removal of an adherent piece of membrane, placenta, or blood clot. When, however, the hæmorrhage occurs during an operation, which is done several days after the onset of the fever, and continues after thoroughly curetting, is it much more dangerous and indicates a certain amount of fatty degeneration of the walls of the uterus and poor uterine contractions. The prognosis in these cases is bad. An incident which is alarming is a chill almost as soon as the patient is put to bed. This is unquestionably due to a sudden large absorption of septic matter either through the veins or lymphatics. This was formerly looked upon by myself as a very serious matter, as it meant septic

matter in the general circulation. It is nearly always accompanied by a sudden rise of temperature. Fortunately, as I soon discovered, there was soon a corresponding lowering of temperature. I believe it is this incident which has frightened some operators into standing by and "letting Nature take its course," treating symptoms as they come up. Among the symptoms which they most forcibly combat is the high temperature, and they combat it with what I take to be the curse in medicine of late years—*i. e.*, the antipyretics. It simply means covering up symptoms. This always reminds one of the ostrich, who hides his head in the sand so as not to be seen by his enemy. The surgeon recognizes the fever as the enemy and lowers the temperature instead of removing the cause. The fever does not kill; it is the septic infection that kills.

An accident which may occur in late cases, and which I have seen three times, twice after abortion and once at full term, is perforation of the fundus by the curette. That has happened in my own hands and in the hands of my assistants. It is therefore well to apply the instrument with the greatest caution to the fundus and use only a broad curette. The ordinary uterine curette is entirely too narrow. Fortunately all these patients got well. Since my experience I endeavor to avoid the accident by keeping one hand over the fundus to steady the uterus. (*American Journal of Obstetrics, December, 1894.*)

A CASE OF ACCIDENTAL CONCEALED HÆMORRHAGE. By EDWARD REYNOLDS, M. D.

On March 29, I was asked to see a patient with the following history:

The night before, when eight

months pregnant, she had begun to suffer moderate labor-pains, and after they had continued a few hours felt very faint; but on Dr. Twombly's arrival, shortly afterwards, she appeared in her usual health. Slight labor continued during the night, and early in the morning she again felt faint. There was at this time an external discharge of a small amount of reddish sero-sanguinolent fluid. She had been rather over-active for several days, but there was no history of any accident.

When I saw her, at about 9.30 A. M., March 29, her face was pale and slightly drawn, and her lips considerably blanched; the pulse was very feeble, but its rapidity was only 60. I regret that I did not count it at the heart, as its character and the subsequent history leads me to think that I should have found a greater rapidity there. On palpation the uterine parietes yielded to the fingers some slight suggestion of an undue tonicity. The contour of the uterus was uniformly rounded, with the exception of a spot on the left side of the fundus, where a circular area of about six inches in diameter seemed to project slightly above the general level and to be of a softer consistency. The foetal heart was absent. On vaginal examination the cervix was found firm and resistant, not at all shortened; the internal os barely admitted the finger to the surface of the membranes; the head presented; no previa was felt. There was, at this time, no external bleeding.

I was inclined to make a diagnosis of the existence of an internal concealed hæmorrhage, but in view of the rigidity of the cervix thought that any attempt at immediate delivery would be extremely hazardous, from the grave liability which I thought existed, that a profuse hæmorrhage might start up while the os

was still but partially dilated and undilatable. I recommended a policy of inaction, except in so far as it might be possible to expedite labor by cautious stretching of the os at intervals with the fingers, without ether.

I saw the patient again at 1 P. M. Her condition was then unchanged, except that the labor-pains were stronger and the cervix decidedly shortened. There had been no further hæmorrhage.

At 11 P. M. I was again called, to find the accessory tumor larger, the patient decidedly more feeble, the uterus in a state of marked tonic contraction, the cervix spasmodically rigid, and the os about a third dilated, the membranes still unruptured. The patient was at once etherized; under ether the os became thoroughly relaxed, and was easily stretched to an almost complete dilatation by the hand. The membranes were then ruptured, and a considerable amount of liquor annii, slightly tinged with blood, escaped. The patient was allowed to recover from her ether, and within five minutes a dead, but un-macerated, eight months' foetus was expelled from the vulva. The birth of the body was followed by the spontaneous and forcible expulsion of the placenta, with from a quart and a half to two quarts of dark clot. On examination of the uterine aspect of the placenta, it was found that small firm clots existed in the spaces between the cotyledons over the greater part of its surface. The mother's recovery was uninterrupted.

The history of this case, together with that of the very similar case which I reported to this society two months ago, leads me to question somewhat the correctness of the position I have hitherto held in regard to the treatment of these most alarming accidents.

In 1891, in the course of a discussion before the American Gynæcological Society upon the extremely able paper of Dr. Henry C. Coe on accidental hæmorrhage during the first stage of labor, I stated my own opinion that this hæmorrhage could be checked by one means, and by one means only, that is, by securing contraction and retraction of the uterus after the delivery of the child, and advocated that measure for all cases where the condition of the patient is not so bad as to preclude all interference. That opinion was based not only upon my small previous experience with this rare accident, but upon the statistics of the operation previously published in the paper referred to, which is, so far as my knowledge extends, the latest statement of the experience of the profession on this subject; Dr. Coe places the general mortality at 51 per cent., the mortality under the expectant treatment at 75 per cent., and that which attends immediate delivery at 30 per cent. I am led to question whether, with regard to treatment, we are not bound to classify the cases in accordance with the severity of the symptoms and the condition of the cervix. It is theoretically possible that there may be cases in which the strength of the uterus is sufficient to keep the hæmorrhage within bounds for a length of time sufficient to allow a dilatation of the os to occur, or, at least, softening of the cervix by the natural forces. Upon the other hand, no obstetrician of experience will doubt the statement that a dilatation of the rigid cervix may well occupy sufficient time to allow the hæmorrhage to become fatal if it should start up during the operation, an accident which the history of these cases shows to be not unusual.

The treatment which I should propose for myself in future cases of

this desperate nature is as follows: If the hæmorrhage is from the start so profuse as to occasion great distention of the uterus and an early and alarming collapse of the patient, a large majority of the women will be lost under any method of treatment; but I still believe that a prompt delivery then offers the only chance that there is for the life of the mother.

[The question of the possibility of saving such cases by the prompt performance of Porro's operation has been suggested, but the time does not seem to me ripe for more than the merest mention of this question].

If the onset of the hæmorrhage is gradual, if the initial collapse is not extremely alarming, and the progress of the hæmorrhage seems to have become arrested before any extreme distention of the uterus occurs, I shall determine my choice of treatment by the condition of the cervix. If this is so rigid as to offer a prospect of extreme difficulty in its dilatation, I shall confine myself, as in this last case, to efforts at promoting the action of the natural forces by moderate dilatation of the os with the fingers, stimulation, and other measures intended to sustain the strength of the patient. But I wish to be understood that if this method of treatment is adopted, a physician competent for prompt delivery must be continuously by the bedside of the patient and ready to interfere.

If, in this latter class of cases (with limited hæmorrhage and moderate collapse) the conditions are such as to warrant the belief that immediate dilatation and version will be reasonably easy, I believe that will offer the best chance of saving the patient. The life of the mother is always so seriously endangered, and the fœtus has in the past so rarely been saved, that the existence of the latter should ordinarily be left out

of consideration in determining the plan of treatment which should be adopted. (*Boston Medical and Surgical Journal*, 1894).

OBSERVATIONS ON THE TREATMENT OF FIBROIDS OF THE UTERUS.

DR. O. S. Phelps, of New York, (*American Medico-Surgical Bulletin*) reports an unusually complicated case of fibroid uterine in a girl 17 years of age, who came under his care in 1894. She was sent from the West to New York, by the family physician, to have hysterectomy performed, and came directly to his sanitarium. The tumor was 8 to 10 centimeters in diameter and crowded the uterus well over to the left side. The uterine cavity measured five inches, and the organ with its appendages was surrounded and bound down by an inflammatory exudate. The bladder was impinged upon so that it could not hold more than one or two ounces of urine, causing the patient great agony to evacuate it. The whole mass, including the tumor, exudate, uterus and appendages, filled the pelvis and rose well up to the umbilicus. The patient was much emaciated, weighed 60 pounds (normal weight 125 pounds), could not stand or walk, nor could she turn in bed without great pain. Temperature 100° to 103°. Dr. A. H. Goelet was called in consultation and confirmed the diagnosis; he also agreed that no operation could be considered at that time, but thought ligation of the uterine arteries might be resorted to later. The treatment adopted was the high tension faradic current, fifteen minutes thrice daily, vagino-sacral and abdominal. At each seance the temperature was reduced $\frac{1}{2}$ to 1 degree, lasting 1 to 2 hours. A system of feeding was adopted under the guidance of microscopical observations of the blood and secretions to determine the correct choice of foods. In two months the

temperature remained normal and the weight had increased 30 pounds. Galvanism was then used with anode to tumor per vaginam, by means of a special clay electrode with cathode closely adapted to tumor over abdomen; 20 to 30 milliamperes of current, seven to ten minutes, every five days. January 15, tumor was reduced to a mere nodule, about the size of a walnut, exudation gone; uterine cavity measured $2\frac{3}{4}$ inches. Patient's weight was then 125 pounds.

CONCLUSIONS. — The writer ascribes the favorable results in this case:

First.—To a systematic plan for restoring the nutrition, under such favorable conditions as are afforded by a sanitarium.

Second.—To the persistent use of the high tension faradic current to allay pain, reduce inflammation and induce absorption.

Third.—To the galvanic current, so applied as to concentrate its action upon the fibroid growth.

SUTURE OF THE TORN CERVIX
UTERI. (*New York Medical Journal*, January 19, 1895.) BY WILLIAM R. PRYOR, M.D.

Severe and alarming hæmorrhage from the torn cervix requires suture or ligature *en masse*. An operation to check bleeding from the uterine artery or its branches should not be called trachelorrhaphy. Lacerations of the cervix are not accountable for post-partum hæmorrhage, nor are they accountable for subinvolution. The liability of an open, torn cervix to become infected is a question difficult of solution. If the confinement has been surgically a clean one, infection cannot occur. If the accouchement has been filthy, we have no right to lock up in the uterus the lochial discharge. The torn cervixes of Dubosseir's incisions do not be-

come infected. An examination of frozen sections of post-partum cases fails to show such separation of torn cervical lips as those who advocate trachelorrhaphy picture. It is difficult to tell how much of the tissue will be cervix, when involution is complete, and how much lower uterine segment or vagina; since the anatomical relations of the parts are so disturbed by the merging of the uterine and vaginal canals into one parturient tract. It is the author's belief that there is but one indication for immediate repair for the torn cervix,—hæmorrhage. To do trachelorrhaphy in all cases, where even marked separation of the cervical lips appears to exist, is to introduce into obstetrics one more interfering, meddlesome, routine operation for which there is absolutely no reason; is to add more chance for infection; and is to undo what nature, at great pains and beneficently, has accomplished,—viz., a provision for the free escape of the lochia. The large averted flaps of cervical tissue which we see some months after labor are not natural; but the abnormality existed before conception, has been increased by pregnancy, and demands only the operation which should have been done before conception. (*Review in International Medical Magazine*.)

A POINT IN THE EXAMINATION OF
THE PELVIS IN STOUT WOMEN.
(*The Philadelphia Polyclinic*,
December 1, 1894.) BY HARRIS
A. SLOCUM, M.D.

One of the difficulties met with in the examination of the pelvis in very stout women is overcome by selecting for external manipulation that portion of the abdominal wall in which the adipose tissue has been lessened. This region the author describes as lying beneath a depressed curved line,

a groove in very stout people, running from one anterior iliac spine to the other, with its convexity toward the mons veneris, and generally just touching the upper border of the growth of hair. At this groove and for half an inch above it, the fat will be found to be least in amount. (*Review in International Medical Magazine*).

DOES CASTRATION ACT AS A CURATIVE FACTOR IN OSTEOMALACIA? (*Zeitschrift für Geburtshülfe und Gynäkologie*, 1894, vol. xxxi., No. 1.) BY PROFESSOR LUDWIG KLEINWÄCHTER.

In a severe case of endemic osteomalacia, Kleinwächter has seen a complete cure occur after a Cesarean section, the ovaries not being removed. The patient, a thirty-seven-year-old Jewess, was the mother of eight children, and showed all of the skeleton to be diseased with the exception of the bones of the head. As she was six months pregnant, the producing of premature labor was advised, but refused. The woman was then lost sight of for several years, when a telegram was received, asking for the performance of an immediate Cesarean section, as she had again become pregnant. She informed the physician that her former labor had been very difficult, and since then her pains had been all the more severe. The membranes had ruptured the day previously. The body was now still more deformed, her height having diminished five centimetres. At the examination the finger could barely be admitted into the vagina. It was thought, however, that the placenta was adherent, and the head pressing upon it. An immediate Cesarean section was performed. After removing a living child, forty-

seven centimetres long, the uterus was washed with a warm creolin solution and sprinkled with iodoform. The uterus contracting well, the opening was closed by stitches not penetrating through the muscle, additional superficial stitches of sublimated silk being next employed. Kleinwächter intended to remove the ovaries for the sake of the supposed curative action on the osteomalacia, but did not do so on account of his being physically exhausted at the time of the operation. Recovery was attended with no fever, but was complicated by vomiting and a severe cough. Five months later the woman was in a much better condition than formerly, and after a year she claimed that she was practically well, which was confirmed several years later on by a personal examination, when her physical condition was found to be perfectly satisfactory.

In another case of osteomalacia, where the ovaries were removed at the Cesarean section, the woman died five days after the removal of a decomposed foetus.

The writer remarks how easy it would have been if the ovaries had been excised in the first case to have supposed that the cure had been accomplished through their removal. (*Review in International Medical Magazine*.)

TWO CASES OF LAPAROTOMY FOR PENETRATING GUNSHOT WOUNDS OF THE ABDOMEN — RECOVERY IN ONE CASE. BY C. M. STEMEN. M. D.

C. W., aged twenty-six, a butcher, came under my care while police surgeon in Kansas City, Kansas, on Jan. 16, 1889, at 11 A. M., having shot himself in the abdomen about half an hour previously. He was suffering from the shock moderately and was quite conscious when spoken to,

seemed dazed and frequently groaned. His pulse was 60, markedly dicrotic, but of good volume. The skin was normal and the temperature, per rectum, 98-2. He had not vomited. He lay on his right side, with his knees drawn up, his breathing was slow and shallow with an occasional catch. There was a small bullet wound, with blackened edges, on the border of the costal cartilages on the right side, one inch from the middle line, at the level of the tip of the ensiform cartilage. The pistol was a small 22, carrying a short conical ball. There was little or no external bleeding from wound, no evidence of fluid in the abdomen except a suspicion of dullness in the right flank, but there was no tenderness on pressure over any part of the abdomen. In two hours after he shot himself he began to recover from the shock. Feeling confident, from the situation of the bullet-wound that the ball must have entered the abdomen and hence struck the liver, and fearing that the slight dullness in the right flank was commencing infusion of blood, I had little hesitation in deciding on laparotomy to check hæmorrhage, suture any lesions if present, and cleanse the abdominal cavity. Having removed the injured man home, made ample arrangements for complete antisepsis, the operation was commenced about 3.50 A. M. I first made an incision two inches and a half long over the tip of the ensiform cartilage, and on drawing its edges apart I could see the opening in the peritoneum through which the ball had entered the cavity. Nearly under this and at the attachment of the falciform ligament to the liver was a patch of ecchymosis under the serous covering of the organ, which at once suggested that it was the point where the latter had been struck by the bullet. There was no corresponding patch on the liver

either here or elsewhere, though I carefully examined most of the anterior surface of the left lobe by passing my hand over it. The surface was, however, stained with blood, and a dark clot was seen extending directly downwards in the middle line; it was about the size of the little finger when removed and led me to think that it came from the track the ball had taken. I therefore extended my incision to the umbilicus and found some more and even larger clots lying underneath the abdominal walls and upon the colon and omentum. The first point was to see that the stomach was not injured, and a careful examination of its surfaces as it bulged up into the wound, as well as the fact that it was tense with gas, clearly indicated that it had not been penetrated by the ball, and it was, therefore, returned properly into the abdomen, and the transverse colon lying just below it was hooked up and drawn out of the wound to the extent of about 18 or 20 inches for careful examination. This was also found intact, but the omentum along its lower border was noticed to be much blood stained and covered with clots of blood ranging from one of the size of my thumb downwards, apparently derived from lesions of some of its own vessels. These clots were carefully disentangled from the omentum and the latter was well cleansed, and, much to my surprise, while this was being done, the bullet was found in its folds.

From the position of the bullet it appeared quite clear that it had struck the liver at the insertion of the falciform ligament, glanced off and passed between the abdominal wall and the stomach and the transverse colon, as nearly as possible in the middle line, to become entangled in the folds of the omentum, some of whose vessels were torn. It seemed highly improbable, therefore, that any other viscera were injured.

Nevertheless, all the coils of the small intestines exposed by the incision were carefully examined, and the sponges made out of gauze we here thrust into both flanks and the rectovesical pouch but came out unstained. The viscera exposed were then thoroughly cleansed and readjusted with the omentum over them, and the abdominal wound closed in the usual manner. The bullet track was also scoured, rubbed with aristol and a very fine drainage tube passed into it as far as the peritoneum. Firm bandaging over a sublimated gauze and cotton dressing completed the operation. The operation was well borne, and when the anæsthetic was recovered from, there was no vomiting and only moderate pain, easily relieved by small doses of cocaine.

The patient was fed for some days, per rectum, with milk and brandy. The temperature arose the same night to 103.5, the pulse to 100, and the patient was decidedly restless, but forty-eight hours after the operation both were normal and remained practically so to the end of the case. The dressing was changed on the eighth, twelfth and sixteenth days, union having taken place by first intention, except in the bullet track, which, however, closed and healed rapidly.

F. G., aged thirty-seven, was shot Nov. 21, at 8.30 P. M., with a Colt's revolver carrying a conical bullet weighing 116 grains. I saw him a few minutes after nine, found him comfortable, with no trace of shock and not suffering in any way. The shot had been fired at close range and the bullet had struck the abdominal wall three and one half inches, internal to the right anterior superior iliac spine and one-half an inch below, and had emerged three inches behind the same iliac spine and also one-half an inch below it. There was no bleeding from either opening at this time, but the clothes were con-

siderably stained with blood. From the position of the wound, it appeared probable that the bullet had passed through the soft parts external to the peritoneum without entering the abdomen. This was explained to the patient and also the necessity of giving an anæsthetic. His assent was at once obtained on the understanding that he be allowed to come too as quickly as possible in order to see his friends who had been sent for. On enlarging the anterior wound, a slit was seen in the tendon of the external oblique muscle, and through this a probe was slipped into the abdominal cavity. While a considerable quantity of blood welded up from the latter, it was plain then that a full examination of the abdomen should be made, but it was necessary to let the patient know of his condition. He was, therefore, allowed to recover from the anæsthetic, when he at once gave his consent to any operative procedure which might be necessary, his friends, too, acquiescing readily. It was not, however, until 1.50 A. M. that the operation was begun, owing to some delay on the part of the police and county officers in taking the patient's deposition. All arrangements for complete antisepsis having in the meantime been made, I commenced the exploration by a four-inch incision in the direction of the fibers of the external oblique muscle, having the bullet wound in its center. When the abdomen was thus opened, blood mixed with clots, but without a trace of fæces or odor, escaped to the extent of three or four ounces. Knowing, from a rather large experience of gunshot wounds, the extraordinary erratic course of conical balls in some case, my first course was to make out the track of the ball in this instance. The incision having passed through the aperture of entrance in the peritoneum, the aperture of exit had

to be found if possible, and on sponging out the blood it was seen more than one-half an inch from the first, just below the cæcum. At first it was thought that the latter viscus had been wounded, but this was not so. The bullet then had only just entered and left the abdominal cavity in the fold between the anterior wall and the iliac fossa, a strip of peritoneum only one-half an inch broad separating the two wounds. It was a question whether the intestine was wounded, but this was soon set at rest. When the adjacent coils were drawn out, two wounds were found in one coil which exactly corresponded to those in the peritoneum against which it had rested when the bullet was fired. These wounds were round, with slightly bruised edges, from which the mucous membrane did not protrude. They bled freely, but no fæces escaped from them; the bowel appeared to be quite collapsed on either side. The bowel at first thoroughly emptied by pressure, seized on either side in the fingers of the assistant, two cuts were made with scissors reaching to the meseptric attachment of the intestine. In this way a complete ring of the latter about one-half an inch broad at the injured aspect was removed, the mesentary being only slightly notched. The parts having now been thoroughly cleansed, the serous-surfaces of the mesentry were brought together by a continuous suture of both sides, and the cut edges of the bowel by this means opposed on their approximate aspect, they were united by a continuous suture of fine silk, taking up only the serous and the muscular coats at the edge, the needle coming out on the cut margin and each stitch. This suture was begun at the mesentry behind the latter, care being taken that while it brought the edges into contact it would not narrow the lumen of the bowel. A second roll of interrupted

sutures was now introduced to reinforce the first. There was no difficulty in controlling the contents of the bowel with the fingers, but in suturing the bowel without the contamination of the stitches. The coils of the small intestine within reach were now drawn out of abdominal wound and searched for further injury, with a negative result. They were cleansed and the abdominal cavity was thoroughly sponged out, special attention being given to the flanks and to the recto-vesical pouch. When everything appeared quite clean, the intestines were returned and the wound was closed in the usual manner, a drainage tube being left in the track of the bullet and reaching well into the abdomen. Sublimated gauze and cotton dressing completed the operation. The patient bore it very well and did not suffer from shock. The next day he was fairly comfortable, only complaining of pain in the wound, was thirsty and ate a great deal of ice; pulse 110, temperature 99 to 101. He vomited occasionally, but only a little odorless white fluid. He was kept well under the influence of morphia. There was no distention of the abdomen. His urine required to be drawn off every six hours. On the third day he seemed much better, but still vomited occasionally; pulse 120 and temperature 101.2 to 101.8. He was able to pass water himself. On the fourth day he was still better, though the pulse remained at 120 and the temperature varied from 101.8 to 101. Towards evening the fluid which he vomited began to have a feculent odor and became yellow. The abdomen was more tense than before and the patient not looking so well. In consultation with my colleagues it was determined to release the stitches in the wound and explore it with the finger. This was done at midnight and sutured part of the bowel was felt to be in a satisfactory condition.

The next morning his temperature had risen somewhat to 102.8 and the pulse was 130. During the day he became weaker, was less sick and at 4.45 p. m. of the sixth day he died.

PLASTIC SURGERY IN GYNÆCOLOGY.

Dr. Joseph Price, of Philadelphia, has recently read a paper on this subject, in which he said that the cosmetic element too often predominates in many of the so-called perineal devices. He holds that in order to mend the perinæum intelligently, the mechanism of labor must be understood and the lines of fracture appreciated. In cases of serious perineal laceration with accompanying lacerated cervix, it is often better or imperative, first, to do the perineal operation and to follow this at another time with the cervical repair. The author condemns the plan, advised by some, of performing internal and external operations at one sitting. Perineal tears always occur at certain parts of the perineal structure. These tears are either lateral, under the ramus of the pubes, or central, extending from the vagina to the rectum. The tears toward the rectum tend to run around it rather than through it, owing to the differentiation of structure in these two tubes; the tears of the vagina are a ways from within outward, from above downward, and therefore the external or skin operations for perineal lacerations are essentially unscientific procedures. All operations for the restoring of the integrity of these parts should be done in the lines of destruction, and therefore from within outward and from above downward. When the skin of the perinæum is involved, mending of this is merely a cosmetic procedure. The silkworm gut with shot is by far the preferable material to be used for sutures. As little tissue as possible is to be included within the ligature.

WHAT IS THE CAUSE OF PUERPERAL FEVER?

Dr. John F. Winter, in discussing *nal of Obstetrics*, March, 1895, concludes, after a somewhat extended review of the history of the disease, that there may be several causes.

He thinks there is abundant evidence to show that there are two forms of puerperal fever, both due to the introduction of pathogenic micro-organisms from without. These micro-organisms may be varieties either of septic bacteria or the common bacteria of putrefaction.

The manner of infection differs in the two cases. The septic bacteria, finding an entrance through some wounded surface in the genital tract, make their way into the blood and tissue of the patient, and, multiplying there, become the active cause of a disease. The common bacteria of putrefaction also enter the genital tract from without, but their influence is exerted, not by becoming absorbed and distributed in the blood and tissue, but by setting up the process of putrefaction in any material that happens to be retained in the uterus or vagina. When this occurs certain poisonous products are given off, which, if absorbed into the system, are capable of giving rise to puerperal fever.

The difference, he says, is that in the former there is a living, self-multiplying poison in the system, which once introduced must run its course, there being no antidote as yet known to us except such as would at the same time destroy the life of the patient; while in the latter the poison, though capable, if left to itself, of producing deadly results, is, if the source of the poison be removed and its absorption arrested, quickly eliminated from the system, with entire relief of all dangerous symptoms.

BOOK REVIEWS.

(All Exchanges and Books for Review should be sent to Dr. C. G. CUMSTON, 826 Beacon St., Boston.)

A MONOGRAPH ON DISEASES OF THE BREAST. By W. ROGER WILLIAMS, F. R. C. S. London, 1894: John Bale & Sons, publishers. Price £1 1s.

The study of the diseases of the breast, especially in the female, is of highest importance to the general practitioner as well as to the surgeon, not only because the mammae are frequently the seat of malignant and non-malignant neoplasms, but with the recent investigations much light has been thrown on the pathology of the affections common to this organ, resulting in a surer prognosis, rational treatment and prophylactic indications.

In the volume before us, it may be said that the subject has been thoroughly and carefully reviewed by the author; not only is the literature very complete, but his personal experience and observation find a large share in the book.

In the first five chapters the ontogeny, phylogeny, morphology, mammary variations, polymastia and hypertrophy of the breasts are discussed. A considerable portion is devoted to the pathology, ætiology and treatment of the various varieties of cancer, both in the female and male breast. The other affections treated are as follows: Sarcoma, fibroma and fibro-adenoma of the breast, as well as other rarer varieties of neoplasms, as lipoma, chondrioma, angioma, osteoma, papilloma, etc. Cystic disease, cysts, tuberculosis, syphilis, diphtheria, inflammatory and suppurative processes are

each in turn considered. The work ends with a short chapter on traumata, neuroses and the minor surgery of the organ.

It may be said that Dr. Williams has written a most valuable contribution to the subject of the diseases of the breast, and one that will be found most useful to consult. We know of no better book on the subject in the English language, and can heartily recommend it.

LECONS DE CHIRURGIE. (Delivered at the Hôpital de la Pitié during 1893-'94.) Par le Dr. FELIX LEJARS, Professeur Agrégé à la Faculté de Médecine de Paris; Chirurgien des Hôpitaux. Paris, 1895: G. Masson, 120 Boulevard St. Germain. Price 16 francs (\$3.20).

A more attractive or important series of subjects could not be collected together in any volume on surgery. This volume, of 629 pages, is composed of forty-seven lectures, which may be classed as follows: General Pathology (seven lectures); Surgery of the Limbs (nineteen lectures); Surgery of the Head and Neck (three lectures); Surgery of the Digestive System (three lectures); Genito-Urinary Surgery (seven lectures); Surgical Gynæcology (eight lectures).

Under this form of clinical lectures, the author brings up and discusses a series of interesting subjects of practical surgery, basing them on his hospital cases.

A large part of these lectures is

devoted to *reparative surgery*, such as bone sutures, the treatment of old dislocations of the shoulder and elbow, ankyloses of the knee and elbow, old fractures of the neck of the femur, genu varum, bad bone union of the leg and operative treatment, flat foot with the various operations for its cure. Such are the principal subjects successively considered and put forth in a clear and able manner.

Other important subjects which are treated, of which too much praise cannot be said, are the Ollier-Thiersch graft, the radical cure of hæmorrhoids, the operative treatment of recto-urethral fistulæ, etc.

The fifteen lectures on genito-urinary and gynæcological surgery are most admirable. In them will be found studied a very fought-over question, which has recently occupied the minds of surgeons, namely, suprapubic cystotomy, its indications and technique. Prolapsus of the uterus in its various stages, and vaginal hysterectomy applied to the inveterate and obstinate forms of this condition; bilateral inflammation of the adnexa; the operative treatment of uterine fibroids; polypus and false polypus of the uterus; the urethral and peri-urethral tumors in women, represent the principal gynæcological subjects dealt with. Three tables, giving an analysis of the laparotomies and hysterectomies performed by the author are very instructive.

The work is beautifully illustrated by original figures and photographic reproductions of the cases treated. The able and distinguished author has given to the profession a splendid work that his American *confrères* will certainly appreciate, and who will find in its pages an unusually great amount of information and original work of greatest value.

Like all the publications coming from the press of Monsieur Masson, this volume is a model of elegant typographical work.

THE INTERNATIONAL MEDICAL ANNUAL. New York, 1895: E. B. Treat, publisher.

The "Annual" for this year holds its own as to excellency; it is well illustrated by plates and figures. The chapter on new remedies is very good, and quite complete. Sanitary science is well reviewed.

This standard work keeps the reader up to the times, and in a concise manner describes all new treatments, both medical and surgical.

CLINICAL GYNÆCOLOGY. Edited by JOHN M. KEATING, M. D., LL. D., and HENRY C. COE, M. D., M. R. C. S. Philadelphia, 1895: J. B. Lippincott Company, publishers.

Owing to the death of the much beloved Dr. Keating, the completion of the work, which has been conducted in a masterly way by the present editor, has as far as possible been carried out according to the plans of the former.

Each contributor has been permitted to consult his own judgment with regard to his article, as in this way the individuality of each is best preserved.

The work is practical and has a keen clinical bearing, a feature that is so necessary to the busy surgeon.

The introduction has been written by the late Dr. William Goodell. The methods of Gynæcological Examination and general outlines of Differential Diagnosis come from the pens of Drs. Baker and Davenport. Dr. Hunter Robb, with his usual brilliancy, describes Gynæcological Technique. Gynæcological Therapeutics are clearly dealt with by Dr. Bache McE. Emmet.

Anomalies of Development in the Genital Tract are described by Dr. Barton C. Hirst. Traumatic Lesions

of the Vulva, Vagina and Cervix, Inflammation of the Genital Organs, Genital Tuberculosis, Inflammatory Lesions of the Pelvic Peritoneum and Connective Tissue come from the able pens of Drs. Matthew D. Mann, W. M. Polk, J. W. Williams and Henry T. Byford. Dr. Paul F. Munde's excellent chapter on Displacements of the Uterus is followed by four others which completely cover the field of neoplasms, malignant and non-malignant, of the vulva, vagina, uterus, ovaries, tubes and broad ligaments, by Drs. H. J. Boldt and H. C. Coe. The subjects of Ectopic Pregnancy, by Dr. W. T. Lusk, and the Functional Diseases by Dr. C. D. Palmer, are excellent. The remaining portion of the work is devoted to the Diseases of the Urethra Bladder, Ureters, Rectum, Anus, Breast and Cutaneous Affections peculiar to women, and are treated by Drs. C. Jewett, John Polak, E. E. Montgomery, D. P. Allen, Louis A. Duhring and Milton B. Hartzell.

As is evident from what has been said, the work covers the subject of diseases of women in every direction. The list of the distinguished contributors is quite sufficient to assure its success and its merits. It is a work that is to be highly recommended to both student and practitioner, for its clearness, completeness and scientific value.

LECONS DE CLINIQUE CHIRURGICALE. Par le Dr. PEAN, Membre de l'Académie de Médecine; Chirurgien des Hôpitaux. Paris, 1895: Félix Alcan, éditeur, 103 Boulevard St. Germain.

This volume of 1549 pages is the ninth of a series of clinical lectures delivered by its illustrious author. The present work is divided, as in the other eight, into three parts. It contains ten lectures consecrated to non-cancerous structures of the phar-

ynx, vascular tumors of the female urethra, cysts of the thyro-hyoid and maxillary regions and to the treatment of aneurisms of the great vessels by the author's method of "pin-cement."

In the three lectures on stricture of the pharynx, the writer has endeavored to study the chronic diseases of the soft palate and pharynx as completely as possible. He relates the case of complete obliteration of the pharynx of syphilitic nature, upon which he operated with perfect success and is probably the only one of the kind recorded in surgical science.

The following lecture treats of tumors of the meatus in the female, usually described under the name of polypus, and the treatment which is best adapted to them.

Sub-hyoid fistulæ are difficult in many to cure, and in the lecture devoted to this subject, Dr. Péan points out certain facts regarding their pathogenesis which serve as indications in their surgical treatment.

The tumors of the maxillary bones and their ablation have made great progress, but up to the present their study has only been confined to one bone. Now, it frequently happens that both maxillary bones are simultaneously attacked, and even three have been invaded at the same time. It is these multiple tumors that have received a special description, and the personal cases which are given render this chapter alone a most instructive monograph.

It sometimes occurs that the soft parts covering these bones are also invaded, and from this invasion results special indications that are important to know, and it is for this reason that the writer has given us a masterly description of surgical interference for malignant neoplasms, extending into the soft parts of the face and jaws.

In the ninth lecture, the disease of

the teeth occurring in diseases of the jaw are studied. This lecture is unique, and on account of its importance it is astonishing that no surgeon has as yet devoted his time to this subject.

In the last lecture is the report of three cases of arterial or arterio-venous aneurisms, which were operated on and cured by compression (with forceps) of the dilated vessels.

The second part of this volume is devoted to a detailed report of cases treated in Dr. Péan's service at the Hôpital St. Louis, from Jan. 1, 1890, to Dec. 31, 1891, with remarks on their treatment, etc. They number in all 2114!

The last part of this enormous work is given up to the statistics of Dr. Péan's operations performed for tumors of the ovary, broad ligament and uterus, as well as of the mesentery, peritoneum kidney, liver, intestine and stomach, from Jan. 1, 1890, to Dec. 31, 1891. Some general considerations regarding these statistics conclude this work, which can simply be regarded as a wonder, showing not only the great achievements of its famous writer but his unfatigable and successful efforts as a surgeon.

RESULTATS ELOIGNES DES OPERATIONS CONSERVATRICES DE L'OVAIRE. (RESECTION, IGNIPUCTION.) Par le Dr. R. DONNET, Ancien Intern des Hôpitaux de Paris. Paris, 1895: Georges Carré, editeur, 3 rue Racine.

This excellent little monograph is the result of the work done in the service of our *confrère*, Dr. Pozzi.

Dr. Donnet offers the following conclusions:

Ignipuncture and partial resection of the ovaries, as treatment of diffuse ovaritis and sclero-cystic degeneration of the ovary, have given what they promised: (1) They are efficacious for pain and menstrual troubles;

the cures are definitive. (2) They do not interfere with the fecundity of the patients and pregnancy and labor are in no way disturbed by either of these operations. (3) They are without danger. (4) They never cause the troubles observed after ablation of both adnexa. (5) These operations are indicated in every young woman suffering from the ovaries, with or without menstrual flux, where there are signs of chronic ovaritis, but when the uterus is normal or presents a lesion curable by operations, such as curetting, amputation of cervix, etc. In all cases, the integrity of the tubes is necessary. (6) These operations are counter-indicated in: (a) when, besides the ovarian lesion, there exists a disease incurable by minor operations, such as inveterate metritis, fibromatous uterus, etc. In these cases vaginal hysterectomy should be performed. (b) When the woman is old, near the menopause, and all the genital organs appear affected in spite of the curability of the uterine lesions, it is preferable to perform hysterectomy, thus gaining time, because the ovaries have become useless.

The author gives twenty-two detailed cases in support of his conclusions.

Dr. Donnet has written a useful monograph, and we trust that it may be read, as the ideas and conclusions are most just and the arguments are well defended.

THE YEAR-BOOK OF TREATMENT FOR 1895. A comprehensive and critical review for practitioners of medicine and surgery. In one 12mo volume of 501 pages. Cloth, \$1.50. Philadelphia, 1895: Lea Brothers & Co.

This is the eleventh consecutive issue of this useful little work, and we find that it is up to its usual standard.

A MANUAL OF SURGICAL ASEPSIS.

By CARL BECK, M. D., Surgeon to St. Mark's Hospital, etc. Philadelphia, 1895: W. B. Saunders, publisher. Price, \$1.25 net.

This volume is one of Mr. Saunder's "New Aid Series." It represents a good review on the aseptic methods now in use and their application in surgical practice. The details of various apparatus for sterilization of dressings, instruments, etc., are well given, and the aseptic operation is well illustrated.

The work is quite up to date in every respect and will be found useful to the practitioner and student, who will do well to read, especially the chapters on the sterilization of catgut and silk, aseptic wounds, infected wounds and aseptic injections.

There are many good plates illustrating the book.

DIET LISTS AND SICK-ROOM DIETRY.

By JEROME B. THOMAS, M. D. Philadelphia, 1895: W. B. Saunders, publisher. Price, \$1.50.

We can do nothing better than to give an extract of the author's preface in order to show the merits of the diet lists.

The busy practitioner has little time to write out systems of diet for his patients, or to prescribe the preparation of his favorite foods. In a portable form is a set of ten lists, which include all the common pathological conditions, in the treatment of which diet plays a prominent part.

Undesirable foods may be erased from each list, blanks and space having been purposely left for insertion of special orders.

Each list is made to be torn out, check of the food prescribed, and given to nurse of family. The lists are numbered and the key to the numbers is reserved for the physician.

This is certainly a convenient arrangement and will be found of service.

MEDICAL GYNÆCOLOGY. By ALEXANDER J. C. SKENE, M. D., Professor of Gynæcology in the Long Island College Hospital, etc. New York, 1895: D. Appleton & Co., publishers.

The direction of modern gynæcology has been almost entirely surgical, and it is really refreshing to open a book of this description.

The distinguished author has filled a much-felt want in placing this volume before the profession.

The work is divided into three parts, as follows: Part I. deals with the primary differentiation of sex, development and growth during early life and the conditions favorable to the evolution of normal organization and the attainment of a healthful puberty, consequently heredity, care in childhood, mental and physical education and culture, together with the necessary attentions during the transition from girlhood to womanhood are discussed.

Part II. treats of the characteristics of sex, the adaptation of structure to function, the predisposition to particular diseases, and the causes of certain affections peculiar to women.

The functional and organic diseases common to the period of active sexual life of woman are next put forth.

Part III. discusses the menopause and the diseases occurring after its establishment.

Dr. Skene has covered an almost untrodden ground, the great importance of which cannot be too highly appreciated. This work commends itself not only to the general practitioner but to the specialist as well, who will find in its pages much important information.

ANNALS

—OF—

GYNÆCOLOGY AND PÆDIATRY.

DEPARTMENT OF PÆDIATRY.

"Wherein Popular Education Has Failed."

HAROLD WILLIAMS, M. D.,

Professor of Children's Diseases in Tufts' College Medical School.

IN a comprehensive essay in the *Forum* of December, 1892, under the above caption, President Eliot of Harvard University has discussed the question of the shortcomings of modern education, with the conclusions reached that modern methods of educating the young have been disappointing or have fallen short of the ideal hoped for them, because they tend to the cultivation of other mental attributes than the essential ones of observation, recording, deduction and expression.

None can peruse this brilliant and thoughtful essay without being impressed with the truth that it contains. Yet, in the opinion of the writer, the answer to this question must be searched for by a different method than that pursued by President Eliot.

An observer of the phenomena of nature is continually impressed by

the different aspects which a given object presents when viewed from different points of observation. The drop of water, for example, which appears in the one instance as a globe of translucent fluid, when viewed under different conditions becomes a mass of glowing ruby or a maze of seething life. Human affairs thus also vary according to the standpoints from which they are surveyed, and if the writer, looking at this question of education from the standpoint of a physician, ventures to express an opinion different from the standpoint of a schoolman and a student of pedagogy so eminent as President Eliot, he does so with all humility, not in the spirit of criticism, but with the hope that by viewing the question from another point of observation he may throw some new light upon a subject of the most vital importance to us all.

Assuming, therefore, that popular education has not accomplished the results hoped for it, the question arises: Why has it failed? When an investigator endeavors to penetrate the mystery of an unexplained problem, it is necessary in the first place that he should formulate in his mind exactly what it is that he wishes to know. With the object of his search ever clearly before his mind he is far more likely to succeed in his quest than if he goes blundering about with no clearly defined knowledge of the goal he wishes to reach. In this analogy, it seems to me, the answer to President Eliot's question is to be read, namely: that neither the educators nor those to be educated have in mind a clear comprehension of the object which should be sought for, if education is to accomplish all we hope for it.

"Public education," says President Eliot, "should mean the systematic training of all children for the duties of life"; and yet I would venture to assert that by far the larger portion of teachers and pupils, far from having the eventual aim of education ever before them, have never formulated in their minds at all what these duties of life really are for which education is to be a preparation. Should they be asked the question "What is the object of education?" they would probably respond: "To store the mind with useful knowledge." If by chance they should go a step further they might say: "To teach the young to become useful members of the community, and that they may be enabled to maintain themselves in adult life." This is

equivalent to saying that they have only a general comprehension of the fundamental principle underlying all education, and it is in this imperfect knowledge of the fundamental principle of the object of education that the failure of modern methods is to be sought. To express what I have said in different terms, is it remarkable that popular education fails in its results when educators do not know why they are teaching, and the scholars do not know why they are taught?

Education, as President Eliot says, is to prepare children for the duties of life. These duties are: Their duty to themselves, their duty to their families, their duty to society and to government. Herbert Spencer sums up the order of the objects of education as follows:—"That education which prepares for direct self-preservation; that which prepares for indirect self-preservation; that which prepares for parenthood; that which prepares for citizenship; and that which prepares for the miscellaneous refinements of life."

By direct self-preservation is meant that knowledge which teaches a child to take care of himself, which teaches him to protect himself against injury and disease, and to perfect his body and mind in the highest possible degree. Without such knowledge as this an individual life would not only be manifestly imperfect, but would also come to a premature end.

By indirect self-preservation we mean those branches of knowledge which teach the means of self-maintenance and of gaining a livelihood. The importance of this branch of

education is admitted by all and is regarded by many as the principal object of education.

The third branch of education, which is to prepare for the duties of parenthood, is obviously of the highest importance, not only to the individual himself, since his welfare and happiness depend largely upon the welfare and happiness of his family, but also the future well-being of the race. This, however, is a subject which is not touched upon at all in our modern methods of instruction.

The importance of the fourth division, which prepares for society and for citizenship, and which embraces all moral and political teaching, is generally admitted and understood, and yet for the most part these important divisions of education are left to incidental teaching and constitute but a small part of our school or college courses.

The fifth division of education, that which prepares for the gratification of the tastes and feelings, which educates us for the enjoyments and refinements of life, such as poetry, music, literature, painting and sculpture, is well understood and requires no mention here, unless it should be said that it occupies a position of undue importance in the curriculum of modern teaching.

Having thus briefly reviewed the objects of education, it seems obvious that the most important function of education is that branch which is directed to the highest preservation of self. If life is to be prematurely cut off there is no need of any education; if the body is undeveloped, its usefulness is proportionately dimin-

ished; if it is diseased or unsound, it is just so much unfitted for self-maintenance, parenthood and citizenship. And granting that the highest attribute of individual knowledge is knowledge to protect one's self against injurious influences, then the most important function of education should be the inculcation of such knowledge as tends to the direct self-preservation of the individual in the highest possible degree of bodily perfection. Yet this is a subject which is only incidentally taught, or which, indeed, is chiefly left to be acquired by experience, and is often thus acquired only at the most crippling cost. How few children are adequately instructed in the structure of the human body; in the physiological processes which are in momentary operation in that body; in the laws of hygiene which should teach them to preserve its health and which should protect it against disease; or in the nature or causes of disease! How few parents, possibly highly educated themselves in mathematics and the dead languages by our modern methods of instruction, are sufficiently conversant with human anatomy and physiology and these natural laws to be qualified for the proper care of themselves or their offspring!

A treatise upon the subject of popular education is, of course, beyond the scope of the present paper, but having pointed out what popular education is and wherein he believes it to have failed, the writer, for the purpose of exemplification, will devote a brief space to the first division of Spencer's classification.

In order that children should be taught the principles of direct self-preservation, they should be instructed to guard the body against mechanical injury or destruction. They should be instructed concerning the physical forces detrimental to life, and to strengthen their bodies and minds, in order to resist these forces. They should be taught the importance of strength, health, agility, courage, endurance and self-control, as the shields of the body against antagonistic agencies, and they should be taught how to develop these qualities in the highest possible degree of perfection.

A child should receive a good working knowledge of human anatomy. So long as he lives he is to inhabit the body which nature has given him, and it is, therefore, of the highest importance that he should have a thorough knowledge concerning it. No one would for an instant entrust a delicate and intricate piece of machinery to the care of a person who knew nothing whatsoever concerning it, and yet modern education entrusts to the young adult, having taught him little or nothing concerning it, the custodianship of the human body, the most highly organized and complex piece of mechanism which issues from the hands of the Creator—a body, too, upon which depends not only the well-being of the individual but of generations of descendants.

That a person should intelligently care for his body it is necessary that he should receive a course of instruction concerning it; that he should become acquainted with his bony

structure; with the ligaments which bind the bones together; with the origin and insertion of the muscles which move the bones; with the blood vessels which convey nourishment; with the nerves which prompt the muscles in their varied and complex movement of the bones, and with the brain which directs these voluntary movements. He should receive instruction concerning the blood which nourishes the body, the lungs, kidneys and skin which carry off the waste products of living; and concerning the intricacies of that wonderful system of digestion and nutrition which supplies material for growth and for supplanting loss. And, when he has been taught the structure of his body and the functions of its different portions, he should be taught the laws which govern its well-being and improvement. He should receive instruction concerning the diseases which affect it, their nature and cause so far as is at present known. He should be taught the best methods of avoiding and preventing these diseases, for in the study of preventative medicine lies the amelioration of a vast amount of suffering for the human race.

To particularize upon the importance of what I have said, so far as the sum of human happiness and usefulness is prejudiced by the insufficient modern methods of instruction, let us take the flagrant example of the effect of the venereal diseases upon the individual and upon the community—a subject which is practically ignored, so far as modern teaching is concerned.

Unfortunately for the purpose of

the present inquiry, no reliable statistics can be collected to show the prevalence of venereal diseases among American youth. Still more unfortunate is it that, from motives of prudery and false delicacy, little is known and nothing is taught concerning the so-called social evil. Impure sexual intercourse among the young is known to exist, but the extent of its prevalence is far from being suspected by the general public. Venereal diseases are known to occur, but their enormous prevalence and their disastrous physical consequences are little realized by parents and educators. Yet, looking at this question from a physician's standpoint, I can unhesitatingly say that I believe more physical injury results to the individual and the race as the result of this preventable evil—an evil which is largely due to the ignorance of youth, at which time the habits are in a formative state—than from any other injurious agent, with the possible exception of the abuse of alcohol.

With respect to the prevalence of venereal diseases, Parke in his "Practical Hygiene" says: "It is a question whether a large majority of the young men of the upper and middle classes do not suffer in youth from some form of venereal disease. In the lower classes it is perhaps equally common." This, it will be argued, is an opinion, yet it is the opinion of perhaps the best known authority upon sanitary science of the present day. And it may be argued that this is said of the English youth, yet the experience of many years of medical practice and conversation

with numerous other physicians convince me that it is not an over-statement as regards American young men. Supposing, however, that it is an over-statement as applied to American young men, and that, so far from being a large majority, but fifty per cent. of our youth are at some time afflicted with venereal disease, let us consider for an instant what this means as regarded from a physical aspect alone.

Venereal diseases may be roughly divided into two great classes, syphilis and gonorrhœa. Hitherto, the latter has been looked upon somewhat lightly with respect to its ultimate physical effects, but latterly the opinion has grown among practitioners of medicine that in a very large number of cases a perfect recovery never results; that, while apparently cured, it may again and again appear and without fresh infection. It is further believed that much of the illness among young married women owes its origin to the poison of gonorrhœa contracted by the husband in youth and communicated to his wife after many years of dormant existence. A case of this nature has been recently reported by George E. Brewer of New York, where the germs of this disease were found and contagion followed marriage six years after the primary infection. In such a case as the one just quoted, disease of the ovary and fallopian tube may follow and a wife may become a hopeless invalid because of a single indulgence on the part of her husband long before marriage.

To the male equally severe consequences may follow on maturity as

the after effect of this disease contracted many years previous and believed to have been cured. Organic lesions of the bladder, kidney and urethra often occur in later life as a direct consequence of this disease, and yet I have heard a young man remark, "that he thought no more of this special form of disease than of a bad cold."

In syphilis, on the other hand, we behold an undisputed menace to the well-being of the individual and the race; a disease, often of the most loathsome and painful description, and lasting, in spite of medical treatment, over a period of many years; a disease which often leads to the most serious of all bodily infirmities, and is capable of transmission both to wife and offspring; a disease so disastrous in its consequences, indeed, that life insurance companies refuse to insure persons who have once been afflicted with it. Syphilis is certainly far more common at the present than in the past decade, and during the past few years I have seen several cases of the primary lesions in children under fifteen years of age.

Few persons realize the prevalence of syphilis among the young of all classes. Those afflicted do not hasten to proclaim their misfortune to their friends, and many are the cases which are called by other names. No other single disease is followed by such disastrous results, and no portion of the body is exempt from the consequences of it; in its wake may follow blindness or defective vision, deafness, disease of the heart, blood vessels, lungs and other organs, pa-

ralysis and mental diseases, disgusting affections of the skin, destruction of the bones, death, disease or deformity of offspring. All these sequelæ of syphilis may, and in fact, repeatedly do follow as the direct result of a single illicit indulgence. Yet in the teaching, according to our present methods, this disease receives no mention!

It may be argued in this context, that a knowledge of disease and the risk of exposure will not operate to deter young men from the danger of infection. Yet the same principle does not hold true with respect to other branches of human knowledge. When we know a bridge to be unsound we hesitate to entrust ourselves upon it, and the more conversant we are with its elements of danger, the more we hesitate about incurring the risk. In the illicit gratification of the sexual instinct, as in everything else, there must always be a beginning, and the first indulgence is restrained by many influences, among which may be mentioned the forces of moral training. But knowledge, too, exerts a tremendous restraining influence, and when such an important issue is at stake are we justified if, from motives of delicacy, we withhold this shield of knowledge as an additional safeguard for our youth?

What is here said of the venereal diseases is true also of certain other diseases — small-pox, typhoid and malarial fevers, consumption of the lungs, etc. All these are largely avoidable and preventable diseases; the physical and mental suffering, the impaired usefulness, and the expense

yearly entailed by them is enormous; and yet, for the most part, they could be greatly diminished — nay, possibly, even stamped out — did educators rightly understand that education's first duty is to teach pupils the laws governing direct self-preservation.

It seems to the writer that no right-thinking person can for an instant doubt that such a knowledge as is here indicated would be of incalculably higher value to the individual and the race than the knowledge now acquired of the languages and of mathematics. Moreover, such an education possesses the great advantage of developing the reasoning qualities as no study but natural science can develop them, and as no branch of natural science can do so well. Any one who has much associated with young people cannot have failed to observe the eager interest with which they inquire into the mysteries of their organism, nor to have been pained, too, by hearing the baffling answers that such questions generally elicit. The desire to learn is an essential requisite to the acquisition of knowledge, but

here is a desire to learn implanted in every young person by nature, which is purposely ignored by modern teaching.

The greatest check against the incurring of dangerous risks unquestionably lies in a thorough comprehension of the risk incurred, and it seems to the writer that one has only to point to the list of elective studies in one of our leading American universities where fifty hours per week are devoted to Greek, while not a single hour per week is devoted to the study of the ætiology and prevention of disease, to enable us to see pretty clearly wherein popular education has failed, at least in one very important direction. Popular education has failed because it has devoted undue time to teaching those things which it ought not to have taught, while it has left untaught those things which it ought to have taught, and it has done this because we have never yet truly appreciated the real object to which teaching should be directed. In the words of Pope:—

“The proper study of mankind is man.”

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ORIGINAL COMMUNICATIONS.

The Evolution in America of Abdominal Hysterectomy and Total Extirpation of the Uterus.*

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It is with much diffidence that I undertake to address this distinguished body on a subject with which so many here present, as members or as guests, are more familiar than I; some as the veterans who have watched and aided in the whole evolution of the operation; others as the younger and more active surgeons, who are daily perfecting the technique and extending the scope of hysterectomy, and others still as erudite colleagues widely versed in all the literature of the subject. Yet, when

I received from the distinguished editors of the *Monatschrift fuer Geburtshuelfe und Gynækologie*, Drs. Martin and Saenger, an invitation to prepare for their new journal a report which should represent the progress of some branch of our art in America, I could think of nothing more redounding to the credit of the surgical acumen and inventive genius of the profession of this country than the evolution of hysterectomy in America.

Although the first successful operations were done in this country, and continuous and uninterrupted attempts have been made here to improve the technique and to establish

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the indications of the procedure, yet no land can claim any exclusive distinction either in the invention or the development of hysterectomy. The history of this operation shows to what a degree the surgical world is one community, where many workers in different countries, studying the same problems, interchanging ideas and methods, hospitably and courteously showing to visitors and students the peculiarities of technique which each has evolved as the result of his invention and experience, finally perfect and develop some subject by a sort of insensible growth, so that although certain steps may be named after some distinguished surgeon who has introduced or recommended them, yet the finished operation cannot bear the name of any one man nor be claimed by any one nation.

On the other hand, the same methods are frequently adopted by different men working each for himself in widely separated countries, each deducing the same conclusion, because he has for his premises the conditions offered by the human organism in health and disease, which is everywhere the same.

In this way, Burnham (1) dared to remove the uterus in 1853, when, in operating for a supposed ovarian tumor, he found that he had a growth of the uterus to deal with. He did not know in just what manner the same procedure had been attempted ten years earlier in England, by Clay and by Heath, and afterwards again by Clay, and once by Parkman, always with fatal results. He knew that uterine tumors were held to be

inoperable, and that whenever one was encountered in an operation, owing to an error of diagnosis, the rules of surgery, then current, required that the abdomen be closed immediately. The unerring surgical instinct of this truly remarkable man pointed out the proper course to pursue, and his courage was equal to the occasion. In fact the approval or blame of the profession mattered little to him. He could not be censured and hated more than was already the case. As McDowell had to perform the first laparotomy, risking not only the life of the patient but his own as well, when he operated with a furious mob outside the house, eager to hang the man who would "butcher a woman," and only restrained by the sheriff to the point of agreeing to spare the surgeon until the expected death of the woman should take place, — so Burnham had to encounter the malignant opposition of the profession of the time; he often had to enter the community where he was to operate, in the night, and more than once was chased out of town by instigation of the local physicians, before he had the opportunity to perform the desired operation.

Thus in isolation, and often in peril, the soul of the man was steeled to dare to do what he thought ought to be done, and so on June, 1853, the first successful hysterectomy was performed at Lowell, Massachusetts. Encouraged by this happy result, the other remarkable pioneer of abdominal surgery, Kimball (2), of Lowell, the lifelong rival, and too often the bitter opponent of Burnham, in 1853,

for the first time performed hysterectomy, not in consequence of an error in diagnosis, but deliberately and intentionally. This patient also fortunately recovered, and thus a new operation was born, of a "promise and potency" for good, surpassing the wildest visions of its authors, and so great that even now we are only commencing to realize and take advantage of the opportunities which this operation offers to us for restoring the health of the suffering and for saving the life of the dying.

The operation thus inaugurated was performed both by Burnham and by Kimball during their subsequent period of surgical activity, or for more than a quarter of a century. It was imitated by other operators, and by example and tradition became the type of the American method of operating and the foundation of the successive modifications and improvements by which the operation has at last become so wonderfully successful. It was not until 1863 that Koeberle intentionally undertook the removal of the uterus, and the method which he established was not introduced into America until a considerable time afterwards. It is, therefore, well to recall the essential features of Burnham's original procedure, in order to follow the development of the operation and to contrast it with the methods now in use.

Following the analogy of the manner of treating the stump of the pedicle of ovarian tumors then in use, which had been introduced by McDowell, and had not yet been modified for the worse by the introduction of the clamp and fixation in the

abdominal wound, Burnham secured the pedicle formed of the cervix uteri and the broad ligaments by transfixing it from two to four times, according to its thickness, and tying it firmly with interlocking sutures of strong silk, bringing the ends of the sutures out of the lower angle of the abdominal wound. In this way his central ligature closed the cervical canal, while the lateral ones compressed the arteries to better advantage than if they had embraced too much of the cervical tissue. The ends of the ligatures provided a way for the escape of fluid, and served as drains until they were shut off from the abdominal cavity by adhesions.

Of course there was no antisepsis in those days, and even cleanliness as we now understand it was very imperfectly secured. Consequently only those patients recovered who, after surviving the dangers of shock and hæmorrhage, were lucky enough to be little susceptible to septic infection. Fortunately for the future of this, as of many other operations, little was expected in way of recovery, for sepsis after operation was considered as a part of the natural order of things, and as "a mysterious dispensation of Divine Providence."

When therefore Kimball (3) reported in 1875 nine hysterectomies with three recoveries, and Burnham's assistant and successor, Dr. Irish, of Lowell, reported for him in 1877 sixteen hysterectomies with four recoveries, their results were good for their day and generation; and this was not relatively, alone, but to a considerable extent absolutely true, for it must be remembered that in

all these cases the patients were in a condition of extreme prostration from the size or degeneration of the tumors, or from hæmorrhages, or from pressure on vital organs, before they submitted to hysterectomy. The later generation of operators, who never see these terrible and neglected cases, and who remove fibroids of the size of a cocoanut or much smaller, can hardly realize what it must have cost in nerve and moral courage to operate repeatedly, and only, on cases so appalling that at the present time very few would care to undertake to afford them surgical relief.

The results of others both in this country and in Europe were as bad or worse, with the exception, perhaps, of a few operators such as Péan, Hegar, and Koeberle. I do not wish to encumber this report with statistics, so I will only refer to the careful collection of cases published by Gusserow (4) in 1878, in which he shows that up to '66 Koeberle had lost all but eight out of forty two hysterectomies, or 81 per cent., while Péan, in '76, had lost eight out of twenty-four patients, or 33 per cent. Schroeder had collected reports of 108 laparotomies for uterine myomata, with a mortality of 85.3 per cent. Among these there were 73 cases where the uterus was removed with the tumor; of these 55 died, a mortality of 75.4 per cent. "Thomas, Diseases of Women":—24 cases, with 18 deaths, according to Storer, adding 10 cases, all American, and all fatal, 1874.

Of course such sad results discouraged most men from attempting the operation except in the last extrem-

ity, and this very tendency to delay was a potent factor in causing the results to be bad. A vicious circle was established, which clouded the judgment and discredited the operation. It is only very recently that this vicious circle has been broken, and that we have learned to apply the same reasoning to uterine tumors which was long ago found applicable to ovarian growths; that is, that the earlier the operation the better the results, and the better the results the earlier we feel justified in advising, and the patient feels satisfied in accepting the relief which surgery offers.

I wish to insist on this fact, for in my judgment neither the introduction of antisepsis, nor the elaborate equipment of modern hospitals, nor the improvements in technique, nor the use of the Trendelenburg position would have availed to bring about the enormous reduction in the mortality after hysterectomy, if side by side with all these improvements there had not gone an elimination of the desperate and neglected cases which formerly formed the only class on which operations were performed, and a general disposition on the part of the profession and the public to seek the relief which surgery affords while the condition of the patient offers every promise of recovery.

The period from 1875 to 1878, then, was one when the advocates of hysterectomy were almost discouraged, owing to the bad results which were obtained, and the records of the operations are mournful to read. In 1875 Kimball had been able to publish nine operations, with three recoveries;

but in his remarks at the meeting of the American Medical Association in 1877 (5), although he advocated the operation, he said that to his knowledge the real statistics of hysterectomy were far worse than the published reports would indicate, because there were a great many fatal cases which never were reported. Burnham performed no more hysterectomies after 1876, and only isolated cases, mostly fatal, are reported. The attention of gynecologists was directed to other means of treatment, which might remove the necessity of performing such dreadful operations.

Cutter introduced the use of the strong galvanic current about 1873, and Kimball associated himself with him in this treatment and seems to have abandoned hysterectomy thenceforth. It is unnecessary to do more than mention this subject here; the results seemed satisfactory when anything better than a mortality of 80 per cent. was a gain.

A more important advance was the application by Trenholme (6), of Montreal, in 1876, of Battey's operation of oöphorectomy to the treatment of uterine fibroids. Reasoning correctly that if this operation would stop menstruation, and thus cure dysmenorrhœa, it would also cure menorrhagia, and probably bring about the atrophy of the tumor, which so often occurs after the natural menopause, Trenholm published his first case in July, 1876. The same procedure was independently invented and performed by Hegar in August, 1876, and was at once taken up by Tait in England and by Battey in this country, so that at the Seventh International

Medical Congress in 1881, Battey (7) reported fifty oöphorectomies for myoma with most gratifying results.

In 1878, in Germany, Freund introduced his method of total abdominal extirpation of the uterus for cancer, but the results were so disastrous that it found little support, and was eventually abandoned. In 1881, Bardenheuer (8), of Colonge, not only adapted Freund's methods to the extirpation of the myomatous uterus, publishing four consecutive successful cases with exact and complete histories, but in carrying out his operation he employed the principle, afterwards used by Trendelburg, for Bardenheuer says: "The patient is placed with the head toward the window, and is laid on bags of hot sand, and in such a manner that the pelvis lies on an inclined plane, which allows the light to fall well into the pelvic cavity, and at the same time facilitates the retention of the intestines in the upper half of the peritoneal cavity."

Bardenheuer tied off the upper part of the broad ligaments in two or three sections, opened the anterior and posterior cul-de-sacs and tied the parametrium in two sections. He united the peritoneal and vaginal borders, drained through the vagina and closed the peritoneum above all raw surfaces by a catgut netting sewed to the parietal peritoneum with a catgut running stitch.

It is a pity that his excellent work did not receive more notice, for, although as early as 1873, Noeggerath repeatedly used the same position of the patient in New York, in abdom-

inal operations, both the operation and the position were abandoned, falling under the general condemnation which was given to Freund's operation for cancer, or being entirely unknown to the operators in this and other countries who were interested in the development of hysterectomy.

During the same period, the injections of ergotine into the tumor were highly recommended by Byford (9), and astonishing cases of the diminution, and even of the disappearance of myomata under this treatment, were reported by him and others. About this time, Schröder was improving the technique of the intra-peritoneal treatment of the stump, by amputating the cervix in flaps which could be brought into perfect apposition, while Péan, Kœberle, Keith and Bantock were developing and improving the method of extra-peritoneal treatment of the stump with fixation in the abdominal incision.

Although the latter procedure was adopted by some surgeons, and was used by Kimball in the operation which he reported (5) in 1877, and by various other operators, yet there were not wanting those who employed the method of Burnham, as improved Schröder, and attempted to improve it still further. Thus Marcy (10), of Boston, at the Seventh International Medical Congress, 1881, reported a method of securing the pedicle by sewing it across with the cobbler's stitch in thirteen sections, using Caribou tendon, and passing it by means of a needle with the eye near the point. The bodily heat of the patient was maintained by hav-

ing her lie on a coil of tubing containing warm water, while the abdominal cavity was protected by bringing the tumor and adnexa through an opening in a sheet of caoutchouc, which encircled it tightly, after the manner of dentists in filling a tooth. After securing the pedicle it was amputated by flaps, so adapted that the margins consisted of peritoneum only. These were infolded and closed by a continuous suture of tendon.

At the meeting of the American Medical Association in 1882, Marcy (11) explained this method fully, in an elaborate paper, in which the anatomical structure of fibroids was fully considered and illustrated. The method of securing the pedicle by a continuous chain of sutures from one ovarian artery across the stump of the uterus to the other ovarian artery, is essentially the method later used by Zweifel with such admirable results, except that Zweifel sometimes uses interlocking sutures and only employs tendon or catgut for the stump of the uterus itself, tying the broad ligaments with silk.

Marcy's operation was used by himself and by various surgeons, including the writer, during the succeeding eight years, and it probably represented the best method of securing the pedicle for intra-peritoneal treatment which could be devised, until the invention by another American of the method of tying the uterine arteries in their continuity.

Meanwhile, however, another great advance had taken place, and that was the introduction of a safe and feasible method of removing the entire uterus through the abdominal

incision. This was accomplished in 1888, *dux fœmina facti*. On Nov. 23, 1887, Dr. Mary A. D. Jones (12) presented to the New York Pathological Society a fibroid tumor of the uterus, removed with extra-peritoneal treatment of the stump. She then said to the Society that "she believed a better and more rational procedure would have been to open the abdominal walls, being well assured of the conditions, and liberating any adhesions, then to sever the vaginal connections as in kolpo-hysterectomy and to remove the entire uterus."

On Feb. 16, 1888, she performed total extirpation for a large myoma complicated with immense pus tubes. "The broad ligaments were tied off and the temporary rope clamp thrown around the tumor, a great portion of which was cut away; then Kœberle's clamp was screwed on lower down, when other portions of fibroids were enucleated. The pedicle thus secured consisted of a mass of tumors, one of them three inches in diameter, all closely packed, reaching to the cervix. I knew that to make a pedicle of the mass would not only endanger the life of the patient but render the operation unfinished and imperfect, so I decided at once to proceed as in vaginal hysterectomy for the removal of this portion. I separated the vaginal attachments carefully, preserving the bladder and ureters intact. Still the large size of the tumor would not allow it to come down sufficiently to secure the broad ligaments, so while I was clamping the vaginal opening I requested Dr. Jones, my assistant, to clamp the broad ligaments from above. The size of the

tumor rendered it necessary to deliver it through the abdominal opening. The large forceps which clamped the broad ligaments were left on, projecting through the abdominal wound; by the side of these were placed the drainage tube. Several smaller forceps were left in the vaginal wound; the peritoneal cavity was washed out, the abdominal wound closed and dressed, the vaginal wound left open for drainage and treated as in vaginal hysterectomy. Recovery."

For ten years after the publication of the cases of Burnham in 1878 until the operation of Dr. Jones, no permanent improvements in hysterectomy were invented in this country. All that was done was to try to improve on the methods of Schroeder, or abandoning the intra-peritoneal treatment, to fix the stump in the abdominal wound. The procedures of Marcy and Eastman, ingenious and promising as they appeared to be, did not find much following, and on the whole the profession adopted the extra-peritoneal treatment, being strongly influenced by the admirable results obtained by Keith, Tait and Bantock in England, Hegar in Germany, Péan in France, and others. In 1887 Bantock attended the Eleventh International Medical Congress at Washington, and afterwards the meeting of the American Gynecological Society in New York, and his influence was widely felt, while the results obtained in this country by the men who followed his methods seemed likely to convert all operators to the extra-peritoneal procedure. Most operators used the wire constrictor of Koeberle, while some, like

Irish of Lowell and the writer (13), preferred the elastic constrictor of Hegar. The chief objections to this method, namely, the difficulty of applying it to tumors deep in the pelvis, the large sloughing stump, and the great tension on the broad ligaments, were obviated by careful improvements in the technique, until the operation became and remains an admirable one as far as results are concerned, and it really seemed as if we had a method so perfect that nothing remained to be desired. Nevertheless, an American surgeon, Lewis A. Stimson of New York, invented and introduced an improvement which has revolutionized our practice, until at present there are very few operators who use the extra-peritoneal method by preference, although it is well to add that their results are so admirable as to leave little to be desired.

On Jan. 9, 1889, Dr. Stimson (14) read to the New York Surgical Society a paper entitled "Ligation of Uterine Arteries in their Continuity, as an Early Step in Total or Partial Abdominal Hysterectomy." He reported two cases of total extirpation of the uterus, one for carcinoma and one for fibroid, both successful. His report, though succinct, is so graphic and covers so much that has been attributed to others that I may be excused for quoting somewhat at length. In the first case, one of carcinoma, where the peritoneum over the bladder was involved, he says, "the operation had been begun in the usual manner by multiple ligation of the broad ligaments and of uterus below tumor, with a view to possibly leaving the cervix as pedicle."

"However, in the course of the operation he had sought for and tied the uterine arteries near the uterus, and then had found that he could remove the whole organ easily and rapidly with the knife and scissors, and with but slight hæmorrhage. The operation had been facilitated so much that in the second case he had proceeded at once to tie the uterine arteries. This was for a fibroid tumor, which was pulled out of the abdominal incision, the uterine arteries found by palpating the posterior surface of the broad ligaments close to the cervix. The overlying peritoneum was divided and a catgut ligature placed on each artery. The outer part of each broad ligament, with ovarian arteries, was then secured with one silk ligature on each side. Section of ligaments, incision prolonged across uterus posteriorly and anteriorly, so as to make peritoneal flaps, which were reflected downward, and the uterus severed at cervix. Stump of cervix then lifted with Volsella forceps and cut out with scissors, beginning anteriorly, by passing scissors through into vagina. Bleeding insignificant. Abdominal incision entirely closed in both cases; drainage through vagina for three days."

At the meeting of the American Surgical Association (15) in 1889, Dr. Stimson reported five cases, including the above-mentioned, all successful. "Each uterine artery is sought for at the side of the upper part of the cervix, by palpation of the broad ligament between the finger and thumb; after its position has been thus ascertained, a small incision is made

through the peritoneum, along its course on the front or, preferably, the back of the broad ligament; the artery is separated from the veins with a director, and a ligature passed by means of an aneurism needle. The ureter lies to the outside, and is easily avoided."

In the fourth case "the peritoneal flaps raised from the front and back of the uterus were turned down toward the vagina so that their serous surfaces were opposed to each other, and the sides of the peritoneal gap left by division of each broad ligament were brought together by a continuous catgut suture; a rubber drainage tube was placed in the vagina, so that its inner end projected about two inches into the peritoneal cavity, and the anterior incision was closed. Vagina loosely packed with iodoform gauze; drainage removed in forty-eight hours."

The author also states that "if it is desired to retain the cervix, it can be shut off from the peritoneal cavity, and its raw surface and that of the sub-peritoneal space can be drained into the vagina by a tube placed in the cervical canal."

It is seldom that an operation is devised and performed which is so perfect that it admits of no development or improvement, yet it may be said of Stimson's method that it at once arrested the attention of the profession, and if all operators did not at once abandon the perfected methods of extra-peritoneal treatment, yet some of the most eminent men in New York did so, and quietly performed operations by this method, with results which, when presented

to the profession at large, three years later, inaugurated a complete revolution in the customary method of performing hysterectomy for fibroid tumors, and initiated a wide extension of abdominal extirpation of the uterus for other affections, so that changes were introduced which are even now in process of further development.

Meanwhile the operators in other cities had not been idle. Eastman of Indianapolis had already published (16) in 1887, a method of modifying Schroeder's operation by cauterizing and draining the stump, but this does not seem to have given results with which he was satisfied, and, like many others, after the visit of Bantock to this country in 1887, Eastman repeatedly employed the extra-peritoneal treatment of the stump, finding, however, as did the rest of us, that although admirably adapted to most cases, there were yet many conditions which made it nearly impossible or extremely difficult to use this method. Profiting therefore by his results and experience in vaginal hysterectomy, Eastman devised and carried out a method of total hysterectomy by lifting the cervix well up into the abdominal wound by means of a staff in the vagina. Cutting through posteriorly on to the staff he tied and cut the structures until the cervix was free, and then carrying all the ligatures into the vagina, he drained downwards with rubber tube and gauze.

He published this method in July, 1890 (17), referring to the fact that the whole cervix had been extirpated from above a few times in New York.

The chief merit of this modification of Freund's procedure lies in the invention of the staff, which simplifies the operation greatly, and until the introduction of the Trendelenburg posture, not then introduced into this country, was of the greatest convenience. In August, 1890, Eastman reported and demonstrated his method at the Tenth International Medical Congress at Berlin, where Martin (18) was already operating in a similar manner, but without the staff, and uniting the anterior and posterior peritoneal surfaces, after exsecting the uterus and turning the large number of stitches into the vagina.

The prominence of Eastman in the Western part of the country and the wide dissemination of his method through reports in the various journals of the proceedings of the Congress at Berlin, caused his modification of the Freund operation to become better known for a time than the Stimson method. Thus Ross (19), of Toronto, had proposed and figured in July, 1891, an ingenious method of performing total extirpation of the uterus by passing a chain of sutures from the vagina to the abdominal wall, working from below with a long needle with the eye at the point. He never tried to perform this operation, however, but used Eastman's method in April, 1892, having also the advantage of the Trendelenburg position (20).

Thus, from 1889 to 1892, a few operators were practising the total extirpation by modifications of Stimson's, Eastman's and Martin's methods.

Oct., 1891, Joseph Price (21) stated

before the Philadelphia Obstetrical Society that he had operated on two cases by opening the anterior and posterior vaginal fornices and sewing or tying off the whole of the broad ligaments with a chain or link suture; he had also once opened the fornices in a similar manner and passing up clamps from below, with which he clamped the broad ligaments, thus modifying and improving the original Jones operation. Nevertheless, although at that time Price seemed to favor total extirpation, he soon became known as the chief exponent and defender of the extra-peritoneal method, as recommended by Bantock, and his admirable results with this method, and the influence which he exerted by the large number of his pupils, who began to operate in many cities, and by the courtesies which he extended to surgeons from all over the country who visited Philadelphia to see his work, led to the use of this method almost to the exclusion of any other until 1892.

And in truth the extra-peritoneal method as finally perfected and performed by the hand of a master is a beautiful piece of surgery, and those of us who are abandoning it feel certain regret in parting from it, like the poets to whom Horace gives the advice to reject the verses which, on reflection, do not come up to the highest standard *quamvis invita recedant*. The chief objections to the method come from men who evidently do not fully understand the fine points of the technique. The talk about pedicles several inches in diameter, about tumors which cannot be brought up to form a pedicle, about sloughing,

stinking stumps, is in itself a confession of want of skill on the part of the operator. It is a work of art to form a stump, when the tumor is low down, intra-ligamentous, when one nodule after must be enucleated from under the elastic ligature, but it can be done, and the finished stump, not larger than three fingers pressed together, well secured in the wound with an elastic constrictor, and with dressings which do not require change or become moist for over a week, is a thing of beauty. And when the little constricted pedicle is then cut away it leaves a healthy granulating cavity which can easily be kept clean and practically does not give rise to hernia (22). On the other hand cases do arise where the formation of such a stump is very difficult, where the problem of drainage is of the greatest importance, where the abdominal walls are fat and the uterus perhaps septic or cancerous so that total extirpation becomes a necessity, and when the *modus operandi* is well learned for the difficult cases, it is apt to be used in the simpler ones, if only to promote the comfort of the patient and to prevent having anything in the hospital which has any pus about it at all.

Efforts had not been wanting to improve the extra-peritoneal method, so as to avoid the inconveniences inseparable from the use of pins or clamps on the abdomen. Thus Polk (23), in Jan., 1888, had published a method in which he secured the round and broad ligaments down to the internal os by ligatures, then reflected the peritoneum and some of the tissue of the uterus all around the

lower half of this organ, amputated at the level of the internal os inside of this sleeve of peritoneum, seared the stump to check all oozing and then secured the edge of the uterine peritoneum to that of the abdominal wall with catgut and packed the cavity with gauze, establishing drainage downward through the dilated and cauterized cervix.

Kelly, of Baltimore (24), made a stump in a similar manner to that of Schroeder, and instead of burning it he covered it accurately with peritoneum and then attached it to the parietal peritoneum in the abdominal wound, slinging it by the ends of the sutures, so that it could not be drawn away from the wound, and yet leaving it inside the abdominal cavity so that as it was not constricted it would not slough, and if there were any hæmorrhage it would escape externally.

Henry Byford (25), of Chicago, ingeniously turned the stump through an opening between the uterus and the bladder, secured the stump in the vagina with a clamp and then closed the abdominal cavity by suturing the peritoneum over the bladder to the posterior wall of the cervix, now turned forward.

Neither of these operations seem to have obtained any general acceptance; they were stages of transition and had their proper place in the evolution of hysterectomy, but they have become obsolete in the rapid advance in the technique of this operation.

Attempts were also made to improve the intra-peritoneal method. We have already referred to the

modifications of Schroeder's operation by Marcy in 1881, and Eastman in 1887. A. P. Dudley (26), of New York, had operated as early as 1884, substantially by Marcy's method, and in March, 1888, he assisted in an operation by Goffe, of New York, at which a further modification was devised. This was to separate the peritoneum from the cervix, anteriorly and posteriorly and to transfix and ligate the cervix inside of the flaps of the peritoneum so formed, which then were brought together over the stump of the cervix, thus burying the ligatures. In April, 1890, Goffe (27) published four cases operated on by this method, all successfully, but in all cases the temperature rose on the third to the fifth day after the operation, so that it was necessary to dilate the cervical canal from below in order to evacuate the pus or fluid which had collected above the stump but below the peritoneal covering.

Whether the saving of these patients was due to the fact that the ligature was covered by peritoneum, or to the acumen and resource of the surgeon in locating the seat of infection and in providing exit for its products, we are not able to decide, but the fact that all the cases required dilatation of the cervix subsequent to the operation is very significant, both as showing how the cause of death after the intra-peritoneal method of hysterectomy usually occurs, and as pointing out how such a disaster may be and has been avoided by subsequent improvements in the technique, either by dilating and cauterizing the stump, as used by

Eastman in 1887, and afterwards practised by Chrobak (28) and others, or by refraining from putting any ligatures in the stump of the cervix, leaving it untouched as suggested by Stimson and afterwards practised by Baer (29), or by removing it altogether, after the manner employed by Stimson as described above, or by some of the modifications of this operation which have recently become so popular.

In New York, however, although Stimson seemed to rest on his laurels and to make no further efforts to introduce his method, a further development of hysterectomy was achieved by the use of Trendelenburg's posture. Although, as I have already stated, Bardenheuer had suggested and adopted the elevation of the pelvis in 1881, both for letting the light shine into the lower pelvis and for the retention of the intestines in the upper half of the abdominal cavity, and although Noeggerath had used the same position repeatedly several years earlier, in New York, yet the possibilities of this posture were not appreciated until Trendelenburg revived its use, raising the pelvis much higher than had formerly been the custom. His former assistant, Dr. Willy Meyer, was the first in America to write on the value of this position, and it was immediately adopted by two of the eminent German surgeons of New York, Drs. Boldt and Krug, and perhaps by others.

Boldt reported to the New York Obstetrical Society, on November 5, 1889, three complete hysterectomies performed by the combined vaginal

and abdominal method, and on January 3, 1890, he operated entirely by the abdominal way, closing the peritoneum, vagina, etc., from below, a method which he has since always employed. His first frame for using this posture was constructed at St. Mark's Hospital, in 1889.

Florian Krug performed his first total abdominal extirpation on May 13, 1890, and reported it to the New York Obstetrical Society at the next meeting, and he read a paper (30) before that society on December 15, 1891, reporting seven cases with one death. His method is similar to that of Bardenheuer, except that he drains the pelvis with iodoform gauze through the vagina, and he does not close the peritoneum above the gauze.

The favorable results of Krug, his demonstrations of the advantages of the Trendelenburg posture, and his paper on this subject (31), were most important factors in popularizing the use of this position, and in introducing the method of total abdominal extirpation of the uterus to the profession, first of New York, and then of the whole country.

During the years 1890 to 1892, Polk, of New York, was also performing total hysterectomy, using Stimson's method with various modifications, and taking advantage of the Trendelenburg posture. All of these distinguished surgeons were reporting cases before the local societies, and, by extending the courtesies of their operating rooms to their professional brethren, they were making the new methods known and preparing the way for the changes which were soon to come, and had met with

moderate approval; yet somehow the discussion of all these methods had been merely academic, the acceptance and approval had been coldly formal, there was little interest and less faith in the country in anything else than the extra-peritoneal method. When, however, Dr. Polk, in '92, read his paper reporting seventeen cases of total extirpation with two deaths (32), although the results were not better than had been reported before by some other operators, yet I think that few of his hearers failed to realize that the time for a change of procedure had arrived. In every innovation much depends on the manner of its introduction, and certainly the new method could not have found anywhere a sponsor who could present it more felicitously, explain it more lucidly, or recommend it more convincingly than the distinguished surgeon and brilliant orator who then appeared as its advocate before the American Gynecological Society.

Polk's operation, which he describes as a modification of Stimson's, is similar to that as far as concerns ligation of the ovarian arteries and the upper part of the broad ligaments and turning down the peritoneal flaps in front and behind. After this "drawing the tumor well to the symphysis and then thrusting one finger down alongside the cervix between the folds of the base of the broad ligament, we locate the uterine artery by apposing the thumb upon the posterior or anterior aspect of this structure as is convenient. Lifting the vessel upon an aneurism needle we isolate and tie it. As soon as the same thing has been done upon

the opposite side, the uterus is cut away from the vagina. Begin anteriorly, about an inch above the uterovesical fold, carry the incision around the mass, turning down the peritoneum until the vaginal junction is reached. Then cut directly through, seize the bleeding points that are developed, and ligate with catgut. Examine the cut edges of the broad ligament, and wherever gaping occurs correct it with the continuous suture. Introduce now four long stout catgut sutures. One passes through the anterior vaginal wall, thence to the edge of the peritoneum reflected from the bladder; another through the posterior wall and the cut edge of the peritoneum dissected from the back of the cervix; one upon each side so as to bring the peritoneum together at the sides of the stump of the vagina, passing thence through the lateral vaginal wall. The ends, which of course are now all doubled, are tied in a knot and thrust into the vagina, where the knot is seized with a pair of forceps and drawn well downward, thus turning in the peritoneal surfaces. The vagina is now washed out with water and packed with gauze, the packing resting against the inverted peritoneum in the majority of cases, but in some, where there has been much handling of tissues, it may be extended between the folds. In this latter class of cases a glass drainage tube is introduced to the bottom of Douglas' cul-de-sac from above. The wound is then closed."

Besides this method of finishing the operation, Polk referred to three other ways in which it was sometimes done, viz.: First, that of Stimson, who merely

drops the stump of the vagina into its natural position in the pelvis, passing through it a drainage tube; second, a method used by some operators of closing the vagina by stitching it together from above; and, third, the method of those who infold and close the peritoneum at the floor of the pelvis, and drain the sub-peritoneal space through the vagina with gauze.

Operating by all these methods, Polk presented the history of 17 cases of hysterectomy for myoma, with two deaths.

Polk's paper was followed by one by Baer (33) of Philadelphia, entitled "Supravaginal hysterectomy without ligature of the cervix in operation for uterine fibroids. A new method." He reported nine cases, all successful. The operation was substantially similar to that just reported by Polk, until after the tying of the uterine arteries, when Baer, instead of removing the whole of the cervix, cuts away all the supravaginal portion. The small stump is now released and retracts to its proper place at the bottom of the pelvis and the edges of the peritoneal flaps are infolded over it. If the conditions are such that it has been possible to secure the arteries and the broad ligaments with four ligatures, embracing both folds of the peritoneum, the natural tension of the parts will close the peritoneal folds over the cervix, without further stitches; otherwise the folded peritoneal edges are sewed together, although this is a concession to the force of circumstances, which the author of the paper introduced in a further report to the society in the ensuing year (34). In regard to the

novelty of this method he emphasizes only the treatment of the stump itself, after the corpus and most of the cervix have been removed by a method substantially similar to some of those already in use. Baer regarded it as injurious to transfix and ligate the cervix, or to coäpt it with sutures or to cauterize or dilate it, according to the various methods previously employed. He reasoned that the cervix will not bleed if the arteries are properly tied, that it will not slough if not constricted nor pierced, that the mucus in the healthy cervical canal is not infectious, and that as the canal is sufficient to drain the uterus of its natural discharge it is also sufficient to permit the escape of the moderate oozing which may arise above the cut surface of the stump.

The novelty of the method therefore consists chiefly in the fact that it is performed without ligating, sewing, disinfecting or draining the cervix. Whether this is an improvement over Chrobak's (28) method seems doubtful to many who have not been able to secure as good results as Dr. Baer, although following his method to the best of their ability.

Nevertheless the operation is a good one, and the able paper in which it was presented fitly supplemented that of Dr. Polk, and greatly aided in bringing about the change of procedure which soon spread over this country, and in fact seemed to take its origin from this occasion.

Now, if it be asked why methods already known to many were not generally adopted sooner, I think that it may be said that the chief factors in

popularizing the new methods of operating were, first, the introduction of the Trendelenburg posture; secondly, the facility with which drainage from below can be secured by the use of gauze, and in general and more than all, the increased knowledge of the technique of abdominal surgery, with corresponding improvement in results and increase in confidence.

If we read to-day the masterly description of Bardenheuer (8), and study his method of performing total abdominal extirpation, we find little to alter or improve, except that we would raise the pelvis somewhat higher, would cleanse the vagina and the uterine cavity more thoroughly before the operation, would avoid the use of 2 per cent. carbolic solution in the abdominal cavity, and would drain with iodoform gauze instead of with a rubber tube and the catgut net.

These improvements in the general technique of abdominal operations constitute the advance of today, not any particular improvement in the strictly surgical method of operating.

Unfortunately, however, few surgeons in this country knew much of the technique of total abdominal hysterectomy as performed by Freund (35) and Bardenheuer; they only knew that Freund's operation had been abandoned on account of a shocking mortality, and it was very hard to induce surgeons to try any similar methods of operating, after they had diligently and laboriously perfected themselves in extra-peritoneal methods.

Nevertheless, when the change came it was sweeping, so that at present

it seems that there are only four prominent gynæcologists in this country who employ the extra-peritoneal method, fastening the stump in the abdominal wound. Few of the younger men know how to use it, none are learning it, and it seems fated to disappear as completely as the method of fastening the pedicle of ovariectomy in a similar manner, which was once in vogue.

The arguments for total extirpation which were found so convincing in '92 are precisely the same as those which Bardenheuer used in '81, but he was in advance of his time, and the general state of abdominal surgery did not permit a method to become adopted then which has now become well-nigh universal.

The perception and experience of the extraordinary advantages which the new position of the patient and the new methods of operating afford for the performance of abdominal hysterectomy for myoma, led to the use of this operation not only in cases of this affection but also for carcinoma of the uterus, and for other indications, including operations for pyosalpinx, and this paved the way for the next development of abdominal hysterectomy by making it the operation of election for the latter affection.

This subject was simultaneously brought before the obstetrical societies of New York and Philadelphia in Oct., 1893, by Polk (36) and Baldy (37) respectively, and it was the most important topic for discussion at the meeting of the American Gynecological Society in 1894 (38). The subject was ably presented and the

operation advised and defended by Baldy, who opened the discussion, although in 1892 he had refused to accept total abdominal hysterectomy as an operation preferable to the well-tried extra-peritoneal method. Now, however, he would perform total extirpation from above in all cases where the appendages have to be removed for suppurative disease, unless the condition of the patient is such as to forbid the radical operation. In this view he was supported and ably seconded by Krug of New York, who had first performed hysterectomy for the removal of the inflamed uterus with the appendages in 1890, and was able to support his arguments with the authority of his experience. Hanks and Pryor, of New York, also favored this procedure, which was only accepted with many limitations, but not as a general rule, by most of those who took part in the discussion.

It cannot be said, however, that these views, which still seem rather radical, have received the assent of a large proportion of gynæcologists. The number of cases in which, after thorough removal of the diseased appendages, the patient still suffers permanently from disease of the uterus or from symptoms referable to that organ, is so small, in the experience of many or most operators, including the writer of this paper, that they prefer not to complicate the first operation by making it any more severe than is absolutely required, preferring to perform a subsequent vaginal hysterectomy, if necessary, on the inconsiderable proportion of patients who may require such

relief. Nevertheless it is not improbable that the increasing sense of safety in the performance of total hysterectomy, with increasing skill and experience in the technique, will make the procedure recommended so warmly by Baldy and Krug the rule rather than the exception.

Further developments of total hysterectomy are, first its increased use in cases in which during the removal of tumors or in other complicated abdominal operations, the uterus is left raw and bleeding, or extensive cavities are left in one or both broad ligaments, so that it is important to secure drainage downward and to make sure that continued hæmorrhage from the injured uterus will not occur. Secondly, a great many surgeons perform hysterectomy from above as a matter of choice for cancer of the cervix, in cases in which it has hitherto been customary to perform vaginal hysterectomy. Space is wanting for consideration of the various arguments for and against these procedures. It may be said in brief that general surgeons usually prefer to enter the abdomen from above, while those who are more particularly gynæcologists are more apt to recognize the advantage which the vaginal operation gives in diminution of shock to the patient and in avoidance of hernia, and are therefore more willing to employ a method of operating which seems to them somewhat safer, although more difficult in performance.

The latest improvement in the technique in total abdominal hysterectomy is the method by which Eastman (89) removes myomatous

uteri without ligation of the uterine arteries, enucleating the tumor and the cervix by means of a serrated gouge, keeping close to or inside of the surface of the uterus and severing the fine branches of the uterine arteries as they penetrate the uterine tissues, avoiding all branches which might give rise to troublesome hæmorrhage.

Eastman does not claim that this method is applicable to all cases, but that it is very useful in cases which are suitable for it.

In New York also Krug (40) has lately reported four cases in which he removed the whole uterus for extra-uterine pregnancy, either as a primary or as a secondary operation. In all cases the tube which was not gravid was hopelessly diseased. Krug has since operated on five similar cases; all the nine patients recovered. He limits the operation strictly to cases where both tubes are diseased.

In summing up, therefore, the contributions to the evolution of hysterectomy, and in general to the treatment of myoma, which have been made by America, I desire to avoid any undue claims, and especially I would not appear to ignore the vast influence which European surgery has had on the development of our art in this country. I am perfectly aware that that there has been a constant stream of aspiring youths and of experienced operators always visiting the great European clinics, and particularly those of Germany, and freely partaking of the facilities which a magnificent professional courtesy freely renders. At the same time it is well to remember the fact that where

many men are working on the same subject they may make the same discoveries independently of each other; and especially when methods are reported in languages unfamiliar to the busy worker, he may be in perfect ignorance of what others have done in regard to the subject in which he is engaged.

It is well to consider, therefore, the different steps in the development of hysterectomy which may fairly be considered as American, and we find that the country which gave the world the first laparotomy for ovarian tumor by McDowell, in 1809, gave it also

The first successful hysterectomy (mistaken diagnosis).—Burnham, 1853.

The first intentional hysterectomy, success.—Kimball, 1853.

A very early if not original use of the position, with elevated pelvis, and head to the light.—Noeggerath, 1873.

The first application of galvanism to uterine myomata.—Cutter, 1874.

The first application to the treatment of uterine myomata of Battey's operation of ablation of the appendages.—Trenholme, 1876.

Valuable modifications of the intra-peritoneal method of treatment of the stump.—Marcy, 1881.

A series of improvements in the technique of the extra-peritoneal method of treating the stump by which intra-ligamentous tumors and those deep in the pelvis can be removed.—J. Price and his pupils, 1886, forward.

Total abdominal extirpation of myomatous uterus, by use of clamps (first resuscitation in America of the operation since those of Freund had been abandoned).—Jones, 1888.

First separate ligation of the uterine arteries in their continuity, and total extirpation by this method.—Stimson, Jan., 1889.

Method of total extirpation by use of a staff.—Eastman, 1889.

Total abdominal extirpation, fastening stump of vagina to abdominal incision, for prolapse.—Polk, 1889.

Methods for making the stump intra-abdominal, but extra-peritoneal.—Polk, 1888; Kelly, 1890; Byford, 1890; Baer, 1892.

Total abdominal extirpation of the uterus with suppurating appendages, as a matter of election.—Baldy, Krug, Polk, 1893.

Enucleation of the stump as well as the myoma by the use of a serrated gouge, without severing the uterine arteries.—Eastman, 1894.

Total extirpation of uterus in cases of extra-uterine pregnancy, where the tube which is not pregnant is diseased.—
* Krug, 1894.

Mention should also be made here of the introduction into America and presentation to the profession here of valuable and practical modifications of the operations of Freund, Bardenheuer, Martin and Stimson, by Boldt, Krug, Polk and others, using Trendelenburg's posture, 1889-92.

From the above it will be seen that America not only gave hysterectomy to the world as formerly it had given ovariectomy, but that it took a most active and useful part in developing and perfecting the technique of the operation, and in introducing the various changes by which the procedure, once so formidable, has become now so safe and salutary.

The appended table will show how widely the new methods have been introduced, and with what great success. It will be observed that the refinement of the original extra-peritoneal system at the hands of Price and one of his latest pupils (Cordier), leaves but little to be desired as far as the question of

recovery is concerned; for Price has published forty-six consecutive successful cases, while Cordier publishes thirteen, all successful.

In this connection I may add that it is hardly fair to publish together the statistics of the operators who have taken part in the development of hysterectomy, and who have had to struggle with imperfect methods and to undertake neglected cases, and those of the younger operators who find a perfect technique which they can learn as assistants of experienced operators, not to speak of the fact that in their zeal and in the sense of security derived from success, they perform operations now on cases which no one would have thought of touching four years ago. Therefore, to be really fair, all series of operations should be divided at the year 1892, when the introduction and general use of perfected methods and the Trendelenburg posture put every one on an equality. From this point of view it will be found interesting to compare the following table with the one given by Marie Werner in July, 1891, and in October, 1892, in the *ANNAIS OF GYNÆCOLOGY AND PÆDIATRY*.

There is yet another reason why it is difficult and somewhat unfair to compare the statistics of different men. That is, that some operators use vaginal hysterectomy for all simple and easy cases of small myomata, or they use ablation of the appendages, so that the fibroids on which they operate are larger, more complicated and more dangerous than the tumors of small size which represent the average of cases on which other surgeons perform operations.

The same may be said of cancer, and in regard to salpingitis the difference is even more marked, for one man will perform operations by abdominal hysterectomy on all cases of pus tubes, while another will reserve the operation to cases in which the adhesions are so severe that the uterus is stripped and bleeding, or manifestly the seat of infection or purulent infiltration, so that it cannot be allowed to remain.

There is in the minds of some men also a feeling that the discrepancies inherent in the nature of statistics are greater than the circumstances just mentioned can account for. Thus Dr. Ross of Toronto writes: "Not having any faith in the accuracy of statistics owing to the frequent unfairness of comparison, I do not care to give the exact number of cases," and he sends no list. Dr. F. W. Johnson of Boston writes: "I find that the hysterectomies that I have done have been for cancers and for fibroids and for no other reason. Consequently my statistics will not compare very favorably with those who have been removing normal uteri. I do not care to report them.

Dr. Thomas Addis Emmet goes much farther than this and condemns the present zeal for hysterectomy, which he considers as a temporary and mistaken enthusiasm, founded often on want of broad knowledge and not seldom on unworthy motives. Although his views are harsh it is not to be doubted that they represent those of many honored members of the profession, who in silence deplore the activity of the modern hysterectomist, and consider him as a professional Cataline, so that it might

truly be said of their attitude toward him:—

“Cum quiescunt probant: cum patiuntur decernunt: cum tacent clamant.”

To obtain the statistics contained in this table I have addressed a circular letter to the members of the American Gynæcological Society, and to those of the American Association of Obstetricians and Gynæcologists, as well as to such other gynæcologists and general surgeons as have presumably performed hysterectomy repeatedly. I have presented here the information obtained from 42 operators, comprising most of those who are prominent in this country, although there are several vacancies in the roll which appeal to us with tacit eloquence.

In stating the total number, amount of operations, and the gross percentage of mortality, I have included several returns giving approximate numbers of operations and mortality estimated from recollection; yet in calculating more closely the mortality of each method of operation I have omitted all imperfect or partial returns.

I thus find that including all cases reported there were 1670 suprapubic hysterectomies and total abdominal extirpations with 232 deaths, or a mortality of 13.8 per cent. Rejecting all approximate returns with estimated mortalities there were 1188 operations with 164 deaths, or a mortality of 13.8 per cent., as follows:—

		CASES.	DEATHS.	P. C.
A.	Abdominal (supra-vaginal hysterectomies, stump extra-peritoneal)...	444	59	13.3
B.	“ “ “ “ intra-peritoneal)...	38	15	40
C.	“ “ “ “ infra-peritoneal)...	204	22	8.3
D.	Abdominal total extirpation of uterus for myoma.....	313	39	12.4
D ¹ .	“ “ “ “ cancer.....	81	25	30.8
D ² .	“ “ “ “ salpingitis.....	49	4	8.7
Total		1188	164	13.8.

If the 29 cases of Baldy with one death where hysterectomy was performed for salpingitis, but the whole of the stump was not removed, were

taken from C and added to D² the mortality of C would be increased and that of D² would be diminished in each case by one per cent.

Table showing Cases of Hysterectomy and Results.

NAME.	CITY.	A		B		C		D		D ¹		D ²		TOTAL NUMBER OF OPERATIONS.	TOTAL NUMBER OF DEATHS.
		Number of Operations.	Number of Deaths.	Number of Operations.	Number of Deaths.	Number of Operations.	Number of Deaths.	Number of Operations.	Number of Deaths.	Number of Operations.	Number of Deaths.	Number of Operations.	Number of Deaths.		
B. F. Baer.....	Philadelphia.....	1	..	..	..	69	5	3	2	..	..	..	..	73	7
J. M. Baldy.....	Philadelphia.....	23	2	..	..	60	3	..	..	12	2	..	..	100	7
H. J. Boldt.....	New York.....	13	3	11	2	..	..	36	8	..	..	..	..	60	13
H. L. Burrell.....	Boston.....	..	..	..	..	..	..	7	..	1	1	..	..	8	1
H. T. Byford.....	Chicago.....	7	3	..	..	*51	2	..	..	..	..	..	..	58	5
J. H. Carstens.....	Detroit.....	30	3	..	..	..	..	9	1	..	..	..	..	39	4
A. H. Cordier.....	Kansas City, Mo.....	13	..	..	..	..	..	..	..	5	..	..	..	18	..
A. F. Currier.....	New York.....	2	1	..	..	..	..	5	..	1	1	1	..	9	2
E. W. Cushing.....	Boston.....	40	8	3	3	26	4	21	5	5	3	1	..	96	23
L. H. Dunning.....	Indianapolis.....	8	2	..	..	7	0	1	1	..	..	..	..	16	3
J. W. Elliot.....	Boston.....	11	..	..	..	2	2	1	..	2	..	1	..	17	2
Christian Fenger.....	Chicago.....	3	2	3	3	1	..	..	..	..	..	..	..	7	5
C. C. Frederick.....	Buffalo.....	2	..	1	..	..	..	3	..	8	3	..	..	14	3
J. R. Goffe.....	New York.....	..	..	6	1	6	..	1	1	2	1	..	..	15	3
R. B. Hall.....	Cincinnati, O.....	17	4	4	..	..	..	34	3	3	1	..	..	58	8
J. C. Irish.....	Lowell, Mass.....	47	8	3	3	2	..	8	1	11	1	..	..	71	13
J. E. Janvlin.....	New York.....	..	..	..	..	2	..	1	..	9	2	..	..	12	2
Mary A. D. Jones.....	Brooklyn, N. Y.....	1	..	..	..	..	..	2	1	..	..	..	..	3	1
J. H. Kellog.....	Battle Creek, Mich..	17	2	..	..	..	..	1	1	..	..	..	..	18	3
H. W. Longyear.....	Detroit, Mich.....	..	..	..	..	4	1	4	1	..	..	..	..	8	2
Malcolm McLean.....	New York.....	..	..	..	..	5	..	..	..	..	..	..	..	5	..
Beverly McMonagle....	San Francisco.....	4	..	6	3	10	1	40	..	..	..	8	1	68	5
M. D. Mann.....	Buffalo, N. Y., (1893).	21	2	..	..	2	2	15	1	..	..	..	..	38	5
R. T. Morris.....	New York.....	5	..	..	..	4	..	9	..	1	1	2	2	21	3
Paul F. Munde.....	New York.....	20	4	..	..	5	1	22	5	3	1	..	..	50	11
Reuben Peterson.....	Grand Rapids, Mich.	3	..	..	..	1	..	..	..	1	1	..	..	5	1
L. S. Pilcher.....	Brooklyn, N. Y.....	3	2	..	..	..	..	5	..	5	1	2	..	15	3
W. M. Polk.....	New York.....	11	2	..	..	..	..	47	3	2	1	22	1	82	7
J. Price.....	Philadelphia, to 1892	92	6	..	..	..	..	..	..	..	..	..	..	92	6
William R. Pryor.....	New York.....	3	..	..	..	..	..	14	1	2	..	12	..	31	1
Edwin Ricketts.....	Cincinnati, O.....	2	..	..	..	..	..	3	2	..	..	..	..	5	2
Marcus Rosenwasser...	Cleveland, O.....	1	1	..	..	4	..	1	..	1	1	..	..	7	2
A. L. Smith.....	Montreal, Canada...	9	1	..	..	..	..	..	..	..	..	..	..	9	1
L. A. Stimson.....	New York.....	4	..	..	..	..	..	8	1	6	4	..	..	18	5
R. S. Sutton,.....	Pittsburgh, Pa.....	12	1	1	..	1	..	5	..	..	..	..	..	19	1
X. D. Werder.....	Pittsburgh, Pa.....	14	2	..	..	2	1	7	1	1	..	..	..	24	4
		444	59	38	15	264	22	313	39	81	25	49	4	1188	164
		13.3 p. c.		40 p. c.		8.3 p. c.		12.4 p. c.		30.8 p. c.		8.2 p. c.		13.8 p. c.	

* Byford's Method.

I would like to add a few words concerning the present state of professional opinion in regard to certain questions at present under discussion, also concerning the methods of operation which are now most in vogue here. It would obviously be impossible, however, within the limits of this article to reproduce at length the opinions with which I have been favored in response to my circular, but at an early date I propose to publish at some length the answers to my letter of inquiry, thus recording more minutely the attitude of the profession at this time in regard to these important questions.

I may be permitted to add a few words as to my own methods and results. I have set down in the table every one of my hysterectomies, from the very first, thus including many which I am sure would turn out differently if I could perform them now. Hysterectomy in 1887 and 1888 was not what it is now, and those who have grown up with it and had a part in developing it have many things to regret, but in vain. The record cannot be altered.

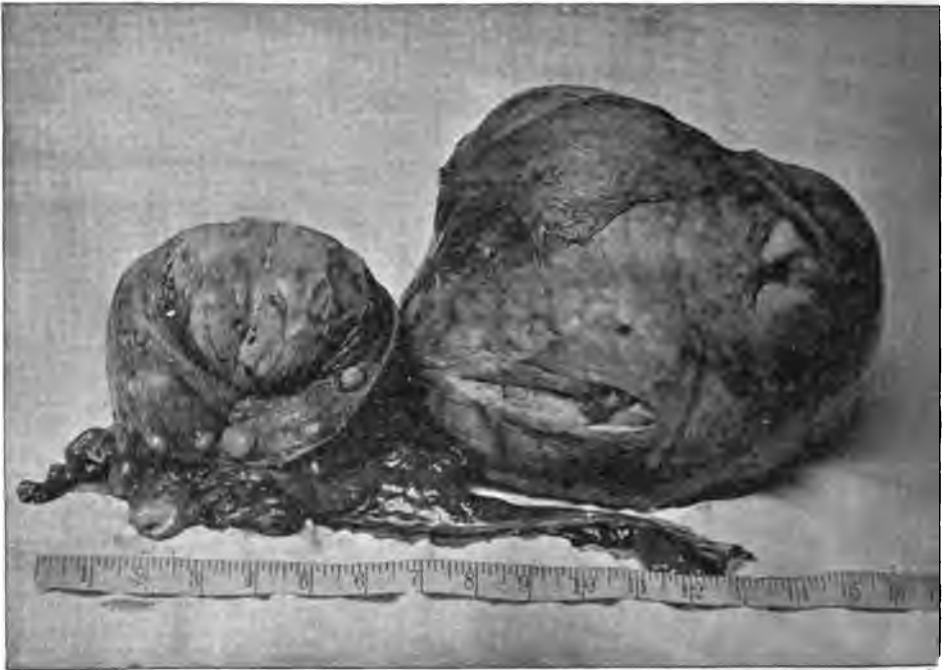
"The moving finger writes, and having writ
Moves on; nor all thy poetry and wit
May aught avail to change a single line,
Nor all thy tears blot out one word of it."

I have tried all the principal methods, beginning with that of Schroeder, with which I performed my first three operations—all resulting fatally—in 1887. Then I adopted the extra-peritoneal treatment, and conscientiously endeavored to do my share in developing it from the crude and clumsy method which was originally in vogue, to the work of art and thing

of beauty which it finally became. With the progress of time the mortality became very low under this method, but in 1892 I began to use the procedure reported by Chrobak, dilating and cauterizing the stump, draining it and covering it with peritoneum. This method gave me twelve consecutive recoveries; but, unfortunately, I was led to attempt to dispense with the dilatation and draining of the stump, when I promptly lost four cases. Then I passed to the method of total extirpation, using Polk's procedure; and with this my success was very good, but not so good as with that of Chrobak, so that finally I have returned to the latter procedure, which has given me eight more consecutive recoveries, or twenty in all. At present, therefore, I prefer this method in all cases in which it is applicable; that is, where the cervix is not voluminous, and where there are not such extensive bleeding surfaces as to make free downward drainage desirable.

If the tumor is malignant, or if for any reason it seems best to remove the whole cervix, I do so, and use a drain of iodoform gauze in the vagina. If time is important, or if there is oozing in the abdomen, I finish the operation by Polk's method; but if the conditions are favorable I close the peritoneum completely above the gauze. In any case I am apt to use a glass drainage tube for one day, unless the case is particularly simple.

All myomata of moderate size I remove by the vagina, by *morcellement*, with results thus far uniformly

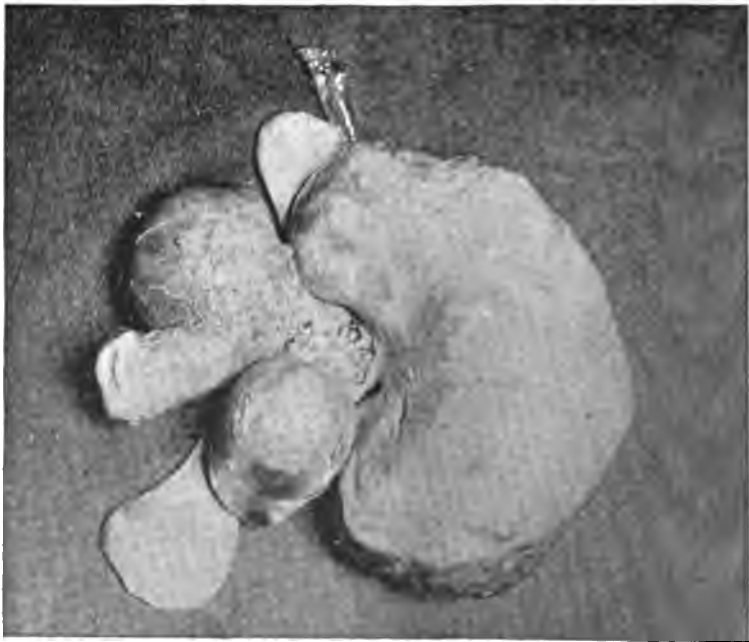


A
LARGE MYOMA OF UTERUS. CASE I. Page 595.

A. Cervix Uteri, entire.

B. Piece of peritoneum removed with tumor.

D



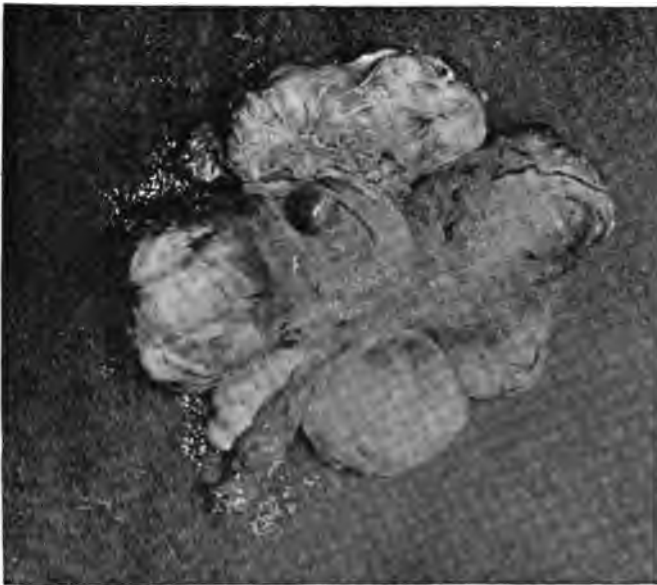
C
MYOMA UTERI. CASE II. Page 596.

A. Fundus Uteri. B. Cervix, entire.

C. D. Ovaries flattened by pressure.

PLATE II.

C



B

A

A



B

C. D.

MYOMA OF UTERUS—4 LOBES. CASE III. Page 596.

A. Right Tube and Ovary. B. Anterior Lobe of Tumor.
C. Left Ovary. D. Stump of Cervix.

successful; and the vaginal operation is likewise used for all cancers of the cervix and for most of those of the uterine body.

The cases of myoma and cancer reported as removed by abdominal hysterectomy represent, therefore, large and serious growths, often with severe complications, and the statistics are correspondingly burdened with mortality.

In regard to the use of hysterectomy for cases of pyosalpinx, I have not found it necessary to employ it for fear of future trouble with the uterus. Of a very large number of operations for pyosalpinx, only a few have afterwards showed evidence of uterine disease for more than a few months. In these few cases, perhaps half a dozen in number, vaginal hysterectomy was found easy of performance and gave entire relief. Once I employed hysterectomy at the original operation, because the whole posterior surface of the uterus was raw and bleeding. Although I have used this procedure so little in the past, I think that in many cases it will be found indicated, particularly where the enucleation of the appendages gives little shock, the patient is in good condition and the uterus large and heavy. This question is so complicated by the claims of the vaginal operation in cases of pyosalpinx, that it is impossible at present to foresee just what the practice of the future will be.

In conclusion I may say that I am profoundly gratified at the enormous improvement and development of hysterectomy. In 1887, when I began to perform the operation, the mortality in the best hands was over

33 per cent., and the real mortality was fully 75 per cent., if all cases could have been recorded. The operation was a last and terrible alternative to imminent death, from exhaustion or suppuration. Now we hear of few of these neglected cases; they are dead, or have survived operation and are cured. They should be found no more in civilized communities. The sentiment of the profession supports early operation with increasing unanimity, and I quite agree with the estimate of the mortality from hysterectomy for uncomplicated myoma as not more than 5 per cent. In simple cases, taken early, it is less than 5 per cent. With small tumors by the vaginal method of hysterectomy there should be no mortality at all, and my experience warrants this assertion.

Surely there are few major surgical operations which have made such great progress, even in this era of rapid improvement.

The illustrations accompanying this paper represent specimens which are interesting from certain peculiarities of the tumor.

CASE I. (plate I., fig. 1).—Patient forty-three years old, healthy and strong, had noticed a mass in the abdomen for several years, which gave her no inconvenience. Within six months, however, it had increased very rapidly in size, but occasioned neither pain nor hæmorrhage. She nevertheless was alarmed at the growth, and uncomfortable in carrying a "watermelon" in her abdomen. Operation at Charity Club Hospital, April, 1895.

The large tumor was found to be

entirely retro-peritoneal, so that the insertion of the descending meso-colon appeared to spring directly from the tumor on the left. It was necessary to split the peritoneum and enucleate the large mass, when the smaller one was brought out without much difficulty. The figure shows at B all of the peritoneum which was taken away with the tumor. The whole cervix was removed, the edges of the vagina sewed to the adjacent connective tissue with catgut, and a rope of iodoform gauze was drawn down into the vagina, the upper portion reaching well up into the left iliac region. The peritoneum was then united with catgut from the stump of one ovarian ligament, completely across to the other, burying both of these stumps as well as those of the broad ligaments. The retro-peritoneal space was drained by the gauze, which was removed on the fourth day. No drainage through abdominal incision. Recovery uneventful.

CASE II. (plate I., fig. 2).—A young woman, apparently in perfect health, was suddenly seized with inability to urinate, accompanied by violent pain. Dr. Plimpton of Norwood being called, succeeded in drawing the urine after dislodging a fibroid tumor which occupied the pelvis. The growth increased steadily, and after a few months Dr. Plimpton brought the patient to me for operation. There was no pain nor hæmorrhage, but continuous and rather rapid increase. The operation was at my Sanitarium, April, 1895. The larger portion of the tumor was now freely movable in the abdominal cavity and loosely connected by a pedicle with

the uterus, which was retroverted and enlarged, and contained myomatous nodules. The ovaries were flattened from long pressure. The whole uterus was removed and the peritoneum united to the vagina by Polk's method with four catgut stitches, of which the lateral ones were made to shut off all oozing spaces in the parametria and to bring together the two peritoneal lamina of the broad ligament. Gauze drainage through vagina and glass tube, through abdominal wound to bottom of cul-de-sac. Glass removed in twenty-four hours, and gauze on the fourth day. Recovery uneventful.

CASE III. (plate II., figs. 1 and 2).—Miss X, aged twenty-seven, had suffered for four months with incontinence of urine and partial paralysis of lower limbs, so that she was confined to the bed most of the time. I saw her in consultation with her physician, Dr. H. F. Leonard, early in April, 1895. On examination a globular, fluctuating mass was found in the region of the bladder. The catheter being passed, some twelve ounces of urine were drawn off, although urine had been escaping constantly involuntarily. The uterus appeared to be in normal position; on each side was a mass as large as a lemon, not freely movable, and simulating diseased appendages. The patient being stout and extremely nervous and hysterical, with solid abdominal walls, an exact diagnosis was not made, but it was agreed that pelvic disease was present, which would probably account for the strange symptoms.

On operation a few days after at my Sanitarium, the uterus was found

to be surrounded by four perfectly symmetrical myomatous lobes (plate II., fig. 1), while in front was another hard mass, apparently of a similar nature. The tumor was separated without difficulty down to the internal os, leaving this anterior mass, which was about two inches in diameter, very hard, and indented to correspond with projections on the anterior lobe of the uterine tumor. A sound passed into the bladder showed that this hard, round mass was the hugely hypertrophied bladder, which was now firmly contracted, although the patient had no voluntary control of it. The uterus was amputated just above the vaginal junction, disinfected with a cautery iron, dilated and drained with iodoform gauze. Another strip of gauze was passed between the bladder and the cervix to drain the perivesical space, and then the peritoneum was united from one side to the other, completely shutting the pericervical

region from the abdominal cavity. The patient recovered from the operation without accident, notwithstanding her weak condition, but I regret to say that the symptoms for which she sought relief were not improved during the five weeks while she was under my observation. By drawing off the urine every two hours the involuntary escape of it was prevented, but the bowels frequently acted without the control of the patient, and at times there was complete insensibility of the skin of the lower limbs. There was a tormenting thirst, and, by measurement, five and a half quarts of limpid urine was collected by the catheter in twenty-four hours. Sp. gr. 1,000, no albumen, no sugar. Dr. Morton Prince, who saw the case in consultation, was unable to find evidence of organic spinal disease, and the case appears to be one of aggravated hysteria. Eventual improvement is expected.

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American Gynecological Society.

The President's Address : "The Relations of Lithæmia to Diseases of the Pelvic Organs in Women."*

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Fellows of the American Gynecological Society :

It has been frequently noted that the trend of modern gynæcology is largely toward the surgical side. But it must be admitted that by a resort to the knife, except in the case of injuries, we confess to a certain extent our defeat. We operate to remove what we cannot cure. This I feel sure will not always be so. Therapeutics, aided by chemistry and bacteriology, will some day place in our hands agents which will enable us to successfully combat many of the diseases for which we now resort to surgery. Even without this expected curtailment of the surgical field there are still a large number of cases which are not surgical. They constitute a class which is not always well understood or rightly treated. For their proper care a man must be a physician as well as a surgeon. They do not afford opportunities for brilliant operations leading to great renown and reward, and consequently have not attracted as much attention as they deserve. We cannot always cut the Gordian knot, but must sometimes loose it by careful study, investigation and scientific analysis.

*Delivered at the meeting of the American Gynecological Society, Baltimore, 1895. Certain parts addressed to the members of the society only are omitted.

A recent writer has said : "What is characteristic of these modern days, so far as medicine is concerned, is the high place we assign to the study of the origin of disease." I ask your attention, then, to an attempt, feeble though it be, to throw a little light on the origin of certain rather obscure diseases of the pelvic organs, in which the pelvic disease is sometimes only of minor importance or secondary to certain general conditions.

You will perhaps have noticed that I said "pelvic diseases." I did this purposely. There are three sets of organs in the female pelvis, differing in function, but still so intimately associated, not only in position, but in function as well, that they are often involved together. No discussion of this subject would be complete which did not include the urinary and alimentary organs as well as the genital. To show how these organs may be related by their position alone, take the course of gonorrhœa as an example. Not only may this disease travel up the genital canal, but the urinary tract, even to the kidneys, may be infected. The rectum also does not always escape. I believe that it is involved more commonly than is generally supposed, and that some of the severe and

intractable diseases of this organ will ultimately be proved to be due to the presence of the gonococcus.

It will be admitted, then, that by contiguity alone the pelvic organs are all liable to be infected at the same time and by the same disease. While this is most generally true of gonorrhœal infection, it is true to a less degree of septic disease. A septic vaginal discharge, for example, may easily be made to infect the urinary tract. There are other ties by which the pelvic organs are united besides mere contiguity. The vascular and nervous connections are so intimate, and are so joined to certain common centres, that they make other bonds of union. Nor is this all. Through the nervous and vascular connections, the secretions of the different glands formed in or connected with these organs may be more or less reciprocally affected; for, by reflex action, the diseased condition of one may alter the secretions of another, and thus in turn lead to new pathological changes. My meaning will perhaps be made plainer as we go on.

I will now try to enumerate some of the symptoms, both subjective and objective, met with in these cases, in which the trouble seems to depend on this close interdependence of function and disease in the nearly associated pelvic organs. The victims of these morbid conditions—for we can scarcely individualize it as a disease—are very numerous. The symptoms of which they complain are often vague and difficult to describe. They tell us of pains and aches in various places, many of which we call reflex. They complain

of menstrual disturbances, especially dysmenorrhœa and menorrhagia, and vaginal discharges, backaches and frontaches, troubles with the bladder and rectum, frequent and painful micturition, constipation and, maybe, hæmorrhoids. They suffer from insomnia and dyspepsia, with coated tongue and dry skin. And, above all and in all and before all, they tell us that they are nervous. Often the spirits are depressed, and there is sometimes a fear of impending insanity. Headaches are common, especially occipital, and intercostal neuralgia, most frequently affecting the left side, is not unusual. It is not to be imagined that all these symptoms are present in every case; some are rarely met with, while others are more common.

A physical examination often shows no serious lesion of the pelvic organs. There may be a displacement or a cervical laceration; there may not. Rarely are the tubes or pelvic peritoneum affected. The uterus may be heavy and congested, but not always. In almost every case there will be a discharge from the cervix. One or both ovaries may be heavy and prolapsed; pressure over the ureters, base of the bladder and urethra, frequently elicits tenderness. If we pursue our investigation still further we will often find evidence of rectal disease,—hæmorrhoids perhaps, maybe fissure; and rarely there is a catarrhal inflammation of the lower bowel.

We must not forget the urine. If this be properly examined, it will give us much information. We shall find the quantity varying, but almost

always below the normal, often reduced to eight or ten ounces. So frequently is this condition of renal insufficiency present that I make it a rule to measure the quantity of urine passed in twenty-four hours in every case which comes into my private hospital; and I think the results will astonish those of you whose attention has not been called to this symptom. In twenty consecutive cases, taken at random, the greatest amount of urine passed in twenty-four hours was forty-six ounces; the least amount, five and one-half ounces. Average of the twenty cases, fifteen and one-half ounces, or about one-third the normal amount.

This scanty urine is always acid in reaction, usually to an excessive degree, and generally contains an excess of uric acid.

In place of scanty urine we may find this excretion to be clear, limpid and of low specific gravity. Even when the quantity of urine is below normal the specific gravity is seldom high, showing in all these cases a deficiency in the amount of solids excreted. In fact, renal insufficiency may exist and the total amount of urine be near the normal. I have come to look upon this condition of renal insufficiency in its relations with pelvic diseases as of the utmost importance. That the kidneys should do their work in a perfect manner is absolutely necessary for the maintenance of health. Differ as we may as to the exact nature of the poison or poisons contained in the urine, there can be no question but that the urine as a whole is toxic. The retention in the system of the toxic agents

which should be eliminated by the kidney cannot but have a deleterious effect. The amount of urine which is ordinarily passed by a healthy man in about fifty hours, as shown by experimentation, contains enough poison to kill him. The mere statement of this fact would seem to show the importance of the renal excretion.

It has been mentioned that the urine of these individuals is commonly markedly acid in reaction, and that they often contain an excess of uric acid. This is usually found not as free acid, but in combination in the form of amorphous urates. We may accept it as true, says Herter, "that a urine from which the urates separate, gives us good reason to believe that there is an actual excess of uric acid, and that this probability is increased if the density of the urine is less than 1.025."

The converse of this is not true, but when present it serves as an easy test.

Another fluid where examination must not be neglected is the blood. A quotation from Herter will put this better than I can say it: "We must content ourselves for the present with the knowledge that anæmia is one of the important associations, or causes, if you prefer, of excessive uric acid output, and that this may be at the bottom of a large proportion of the chronic states we are considering. I have been surprised to find how many neurasthenics, whom there was no reason to think anæmic, have shown a decidedly reduced proportion of hæmoglobin. But while it is possible that we should refer to anæmia the excess of uric acid in some neu-

rastrhenics, it is more likely that in most of these cases the excess depends upon the associated disorders of digestion."*

It must not be thought that all these patients are chronic invalids. They frequently get better for a while, but relapse after some unusual strain or exertion. Nor must we expect to find all the different lesions enumerated in every case. Different combinations will present themselves. One very often met with is endometritis, failure of digestion, anæmia and irritation of the urinary tract, with, of course, various nervous symptoms added. In other instances the uterine lesions and symptoms will predominate; and so with different combinations. Still a certain family resemblance may be traced in all, enabling us to group them under one head.

What shall we call these cases? Are they neurasthenia or nervous depression? Is the trouble primarily with the uterus and ovaries, and all the rest reflex or secondary? Or may we group them under the head of lithæmia or uric acid diathesis?

It seems to me that we can group them under a specific head or title only with certain provisos. We might call the condition lithæmia, but in doing so we must be careful to remember that the excretion of an excessive amount of uric acid is but "one of the expressions of a great variety of nutritional disturbances." (Herter.) I object to the term "lithæmia," as in a measure begging the question. But, perhaps, with this understanding, and for want of a bet-

ter, we may use the term, because it has been extensively employed and is now getting to be understood in its proper sense. We may accept as a definition of the word "lithæmia" the following: A distinct disturbance of nutrition of a certain type, in which there are peculiar tendencies, one of these tendencies being the output of an excessive amount of uric acid. As this disturbance of nutrition inclines to continue and to recur in the individual, we may properly apply to it the term "diathesis." Hence the term "uric acid diathesis." The best plan, to my mind, is to consider them simply as cases of general disturbance of nutrition, and then before we can claim to understand them we shall be forced to study each case and to find out exactly, if we can, what it is that is the origin of the disturbance. The pelvic lesions may be the cause; or they may be, some of them, the result, for I believe we must discriminate carefully in this regard. To simply treat such cases as though they were uterine or ovarian disease pure and simple is utterly futile; and yet the uterus and ovaries may need treatment, even of a radical nature.

We can, perhaps, get more help in understanding these cases by remembering the close relations which exist between the circulation of the pelvis and that of the liver; so the dependence of the kidneys upon the proper performance of the functions of the stomach and liver; and, again, the intimate nervous connection between the uterus and these other organs. Let me trace out for you an imaginary course of events.

Suppose that the trouble starts in

*See *New York Medical Journal*, page 10, July 1, 1893.

the stomach, perhaps from some errors in diet, or perchance from overwork or nervous strain. This organ, failing to perform its functions as it should, intestinal digestion is interfered with, and imperfectly prepared food products are brought to the liver for its action. But, from the very fact that they are imperfectly prepared, the hepatic functions are, in their turn, impaired. As a result, the hepatic and portal circulations are retarded or interfered with, and pelvic congestion results. This congestion, particularly in the case of the uterus, will result in catarrh, and this may later become a purulent inflammation of a serious type. Many pathologists hold that there can be no inflammation without bacteria. How, then, as a result of a mere blocking of the circulation and a catarrh can a bacterial infection take place? In this way, perhaps: Bacteria in a latent state are always present in the vagina and cervix; they need but the proper conditions to spring into active life and produce their well-known effects. This condition is found in a congested uterus, whose nutrition is thus disturbed and whose power of resistance to the onset of the germs is lowered, and which in the shape of a catarrhal discharge is pouring out the necessary culture medium. In this way a simple catarrh can be changed into a purulent inflammation.

This is not the only effect of the disturbance of digestion. Resulting from the imperfect metabolism of the food products, many poisonous substances are formed in the system. The imperfect action of skin, kidney, liver and bowels fails to excrete these

toxines, which go on accumulating, producing an auto-intoxication. From this result many of the nervous derangements, which, in turn, tend to intensify the functional disturbances. So a vicious circle is established, always reproducing and intensifying the morbid conditions.

Another train of symptoms, often little understood, may be explained by the alteration of the character of the urine. In the paper which I had the honor to present to this society last year, I dwelt on this subject, but must allude to it again. To abnormal, and consequently irritating urine, I attribute many, not only of the symptoms directly referable to the bladder, but others which are not generally understood to be so produced. Its action, is, in a sense, mechanical. Normal urine, which means both normal solid ingredients and a proper state of dilution, is absolutely unirritating to the healthy mucous membrane of the urinary tract; but urine which is too concentrated, and which contains abnormal constituents, is exceedingly irritating. This point is, to my mind, of the utmost importance, and is the key to a proper understanding of many conditions found in the pelvis. Exactly what is the irritating ingredient of this urine is not yet fully determined. Whether excessive acidity is the only thing is not certain; but, be this as it may, clinical observation goes to prove that a neutralization of this acidity, by alkalies, to a considerable extent overcomes its irritative qualities.

As I have already pointed out, pain in the ovarian region may be due to

irritation or even inflammation of the ureters, and this irritation be due in turn to the abnormal urine. The so-called irritable bladder has its foundation in the same condition. Urethral caruncle is but another result, and is, therefore, but a symptom of a general diseased state.

A few words are necessary as to the methods by which the rectum may be involved in this pathological chain. The first way is by direct interference with the portal circulation, inducing congestion of the hæmorrhoidal veins and, later, hæmorrhoids. Constipation is another factor, and is a direct result of the interference with digestion, often aided, as I shall try to show, by improper dress. Another cause of constipation may be found in reflex spasm of the sphincter, effectually locking up the rectum. This may be preceded or accompanied in some instances by hyperæsthesia of the rectal mucous membrane, which in turn may result from pelvic congestion. A backward displacement of the uterus is a frequent cause of constipation, the uterus acting like a ball valve. We must be careful, however, not to place too much reliance on the mechanical theory. Again, the passage through the lower bowel of undigested and therefore often fermented and irritating food will often produce untoward results. In fact, as in the case of the bladder, this may be an instance where diseased conditions in one organ may alter the secretion of another, and thus indirectly through reflex action get up new pathological changes in a third.

Such, then, may be the course of events in one of the cases I have in mind. I have supposed that the trouble began in the digestive tract. This is not always nor even often the case. Frequently the digestive disturbance is a reflex, the point of origin being in some distant organ. I have, a number of times, found the starting-point to be in the eye,—some error of refraction or a muscular disturbance. This may explain in a measure the not well-understood relation known to exist between the eye and uterine disease. To claim to cure uterine disease by means of glasses may seem far-fetched, but I am sure I have seen cases where the correction of the eye-strain was at least a pre-requisite for improvement.

Again, the original source of disturbance may be in the uterus itself. A lacerated cervix, a displacement, or even an endometritis, may readily be the starting-point. The digestive and nutritive disorders follow as a result of nerve reaction, and produce various symptoms in organs distant from the pelvis. Besides the general roundabout connection thus shown to exist between the kidneys and uterine disease, I have sometimes thought that there was a more direct relation. This is only speculative; but it has occurred to me that there might be a direct inhibitory influence exerted from the uterus as a centre on the function of the kidney, so frequently have I found uterine disease, especially endometritis, associated with renal insufficiency. As any link in a circular chain may give way, so almost any of this series of disturbances may be the first. Some-

times the defective link will be determined by inheritance; often by accident, especially the accidents of child-bearing, and again by abnormal environment.

If we seek for special causes, we will find them on every hand,—climatic, dietary, social, the wear and tear, the hurry and rush, and the fatigues and strains of modern life.

One point more in the way of causation I wish to dwell upon, and that is the influence of dress.*

It does not seem to me that the profession has taken sufficiently strong grounds on this very important matter. Beyond an occasional explosion against corsets and tight-lacing, comparatively little has been done. A few men have been working at the problems involved, but they seem to have made little impression either upon the profession or the public. Now it has been proved that displacements, not only of the uterus, but of all the abdominal viscera, may result from only moderate waist constriction. "It is not tight-lacing which does the great majority of civilized women injury, but a dress which fits the form so snugly in the narrow zone of the waist that the increased thoracic space demanded for respiration can be secured only by a downward displacement of the viscera to an abnormal extent."

This is the key to the whole matter, and no understanding of the

harm done by improper dress can be had unless it is kept carefully in mind. Not only may snug-fitting dresses do harm, but loose-fitting waists, if confined by a snug belt, are just as bad.

The displacements referred to are much commoner than is generally supposed. The stomach and large intestine are with marked frequency displaced. If those who are doing abdominal section will observe, they will soon learn the truth of this. Since my attention was called to it, I have seen the stomach below the umbilicus. The large intestine I have found to be almost constantly below its normal level, and I once saw it in front of the uterus. You are all familiar with the great frequency of floating kidney. Now, comparative observations have shown that these displacements are much more frequent in women than in men. For this there must be some cause. Further observation shows that this is limited to civilized women, and, moreover, that men who practice waist constriction, as blacksmiths,—who generally use a belt instead of suspenders,—give about the same proportion of visceral displacements as women.

All this goes to prove, as has already been indicated, that improper dress is the cause; and a careful study of the dynamics of waist constriction will soon convince anyone of the truth of this proposition. It was formerly taught that the function of respiration is not performed in women in the same way as in men. In women, natural respiration, it was asserted, is mostly costal, while in men

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* I am indebted to a paper by Dr. J. H. Kellogg, Battle Creek, for many ideas on this subject,—
"The Relation of the Static Disturbances of the Abdominal Viscera to Displacements of the Pelvic Organs."

the whole abdomen and chest walls move together, the greatest degree of expansion being over the line of the floating ribs. Later investigations have proved that among individuals, or even whole races, where the clothing does not interfere with the respiratory effort, respiration is performed in women exactly as it is in men, agreeing with the description already given.

If this is true, then we can easily see that the present mode of dress among civilized nations, changing as it does the mechanics of so important a function as respiration, must have a marked influence on the contents of the abdominal cavity. If you doubt the prevalence of waist constriction, apply the following test to the women you meet in your consulting room: Put a tape measure around the waist outside the clothing, and note the difference in size between forcible expiration and inspiration. More than half the women will be unable to show any difference at all; about one-third will move the tape a quarter of an inch; while one in twenty-five, perhaps, will move it nearly an inch. Experiments have proved that men can easily change their waist measurements from two to three inches, or more, by forcible expiration and inspiration.

You can thus readily see that respiration, especially if forced, as in taking exercise, in a woman with the lower part of her thorax and waist encased in an unyielding garment—remember a smooth-fitting dress is enough—must exert an immense downward pressure on the abdominal contents. This is only partially com-

pensated for by the unnatural and excessive development of costal movements. This pressure will be propagated, aided by improper attitudes,—lolling in a rocking chair, for example,—to the pelvic viscera and mischief be worked thereon. While this alone may not be able to cause a retroversion, for instance, it can, I am sure, push the uterus forwards and downwards, and is the cause, I am convinced, of the anteverted position of the uterus, which many have come to consider the normal position of that organ.

It is outside the scope of this address to consider either matter of prevention or treatment. But this much I must say: It seems to me the profession has a great and much neglected duty to perform in the matter of women's dress. Nothing will ever be accomplished until the whole conception of what constitutes a beautiful female form is entirely changed and the popular ideal is made to conform to the lines of nature and true art. The average woman of today has a figure no more like the figure nature meant her to have than has a Chinese belle a natural foot. One is as far from the truth as the other, with the advantage on the side of the Chinese, that the foot constriction does not begin to work the harm that is done by the constriction of the waist.

A "campaign of education" is needed, and the profession are the ones first to be instructed. It may be objected that if improper dress is capable of doing so much harm, how is it that women do not suffer more than they apparently do. I can only

answer, that it is because of the great powers of resistance implanted in the human organism. the ability to resist all sorts of unfavorable environment, which is characteristic of man more than of almost any other animal, and because "several pathogenic conditions are necessary before disease can be produced."

Now, to return to my main argument. It must be admitted that displaced organs cannot perform their functions as well as when they are in their natural places. The stomach, for example, cannot empty itself, and the peristaltic motion of the intestine is interfered with. If this be so, then improprieties in dress may be put down as one of the frequent causes of the disturbances of the digestive organs, which results in the series of morbid phenomena which I have attempted to describe.

Again, improper dress may exert a deleterious influence on the digestive functions by at least assisting in the causation of some recognizable uterine disease, such as a displacement, this in turn interfering with the digestive processes by reflex action. By interference with proper exercise and muscular development the general processes of nutrition are disarranged, and so another count is laid at the door of dress.

It may be objected that the subject matter of this address is almost purely theoretical, and is not based on clinical facts. In answer to this I will say that my conclusions have only been reached after careful study and after putting these theories to practical test in the hospital ward and the consulting room. I regret very much

that time precludes the relation of cases, many of which I could cite to prove the correctness of these views, and also that I shall be unable to discuss methods of treatment. I must leave you to draw your own conclusions in this regard.

Why have I called your attention to this class of cases? They are perhaps not strictly gynæcological, but they are in my experience the cases which haunt the consulting rooms and private hospitals of the gynæcologists. They suffer from pelvic pains and backaches, which they have been taught mean womb disease. The disturbance of menstruation and vaginal discharges, almost constantly present, still further direct their attention to the pelvic organs, and they are soon convinced that all their troubles come from the womb. An examination perhaps shows that this is, in part at least, correct; but often only a slight leucorrhœa and a little erosion around the os is discovered. If the practitioner into whose hands the patient has fallen be ignorant or dishonest, he will keep up the delusion and go on treating her locally indefinitely. If he is one of those specialists who sees nothing outside of the pelvis, and nothing in it but the uterus and its appendages, he will apply the curette for the endometritis, or perhaps remove the ovaries for dysmenorrhœa. The curretting may do good, but alone it will not be apt to cure; nor will this be accomplished until the original cause and all the causes of the woman's condition have been looked for and removed.

We must remember that the human organism is a wonderfully

complex affair; that, like a delicate and finely made watch, every wheel, spring, pivot and screw must be in place and accurately adjusted in order that the mechanism may properly perform its appointed work.

The Therapeutic Action of Chloroform in Parturition.*

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THE results of chloroform anæsthesia in parturition constitutes one of the most remarkable and interesting features in the history of medicine. During the past thirty-five years there have doubtless been millions of cases of parturition in which the agency of chloroform as an anæsthetic has been called into requisition in the civilized world, with the rarest report of fatal consequences.

Then, too, when we take into consideration the manner in which chloroform is given in labor, often recklessly, carelessly, and copiously, we are still further astonished at the almost universally favorable results. Often administered by ignorant nurses, husbands, bystanders, even the patients themselves, and not infrequently, recklessly and injudiciously by the attending physicians, it is wonderful that evil results are so rare. Thus, chloroform is used in a manner in parturition that no surgeon would dare do in performing an operation.

The profession has come to regard

the use of chloroform in parturition as almost utterly devoid of danger, and it is this opinion, based upon substantial facts, that has given rise to its universal and careless, even reckless, administration in labor. Why chloroform acts differently in the parturient and pregnant female from the non-pregnant person, or why it is comparatively harmless in the pregnant and is attended with a certain degree of danger in the non-pregnant is a question not devoid of interest or importance. To be enabled to determine what there is in the physiology of pregnancy that protects the woman against the dangers of chloroform would be to ascertain and establish a fact in the therapeutics of chloroform that would shed an infinite amount of light on its therapeutic action, not only in labor, but in a surgical point of view.

During the process of pregnancy there are two systems which undergo manifest changes of a developmental nature. These are the vaso-motor and circulatory systems.

The developmental changes in these two systems are of a phenomenal

*Read before the Obstetrical Section of the American Medical Association, Baltimore, May, 1895.

character. The muscular structure of the left ventricle takes on increased nutrition and growth, that it may have increased force and power to meet the new emergencies of circulation and nutrition. A new being is to be nourished, developed, formed, and shaped in all its parts, and to do this a new force is to be created. The heart of the pregnant female not only acquires additional force, but the great vaso-motor and sympathetic systems, with their ganglia and nerves take on new energy, more vigorous action and power to maintain that complex circulation of both the mother, the placenta and fœtus. Just in proportion as the growth of the placenta and fœtus increase these developmental changes in the circulatory and vaso-motor systems advance, and to these developmental changes another is added, viz., leucocytosis. Otherwise the pregnant woman would utterly fail to sustain her own strength and health, and at the same time nourish the placenta and fœtus. Hence her vaso-motor system and circulation reach a state of development in point of vigor, energy and power, rarely attained in any human constitution.

Under these circumstances arterial tension and blood pressure more than redoubled are indicated in the strong, vigorous, bounding and frequent pulse of the pregnant woman, which is familiar to all practical obstetricians. Such a state of arterial tension and blood pressure would be regarded in the non-pregnant as indicating a dangerous degree of plethora and conges-

tive tendency. But in the pregnant woman we know there is a safety valve, a diverticulum for this increased circulatory force and volume found in the placental and fœtal circulations.

The process of pregnancy, the evolution and growth of the fœtus, require that every energy of the maternal system shall be bent singly to the accomplishment of those objects.

That the therapeutic action of chloroform in the parturient female differs widely from that in the non-pregnant person, there is abundant evidence to prove. We know that in surgical practice chloroform anæsthesia is attended with a certain proportion of mortality that renders extreme caution necessary, while a death or even unpleasant result in labor is a very rare occurrence from that cause.

In the obstetrical practice of the civilized world the most careful researches have only brought to light a very small number of cases of death in the millions of instances where chloroform was resorted to.

We may safely say that in the practice of the world there are twenty cases of parturition in which chloroform is employed to one of surgery and yet there is not the one hundredth part of cases of mortality in the former as the latter. I do not think that this is an exaggerated statement. The most careful investigation has failed to find more than forty deaths from chloroform in labor in the practice of the world from the time that this anæsthetic was brought into use to the present

time. Some high authorities place the number at only three deaths. This is, I think, a wonderful exhibition, particularly when we take into consideration the careless, unscientific, reckless manner in which it is given during labor.

And not only this, but its often prolonged use during protracted labors. I have seen it given in protracted labors every half hour for twelve and in certain cases for twenty-four hours, where there were not only no evil results, but labor terminated naturally and favorably. I have seen in cases of obstetrical operations the patient kept in a profound state of chloroform anæsthesia for two or three hours without the least indication of collapse of the circulation or suspension of respiration.

In a long experience in the use of chloroform, extending over a period of nearly forty years, I have yet to see my first case of the least evil result to mother or child from chloroform. Yet I am opposed to the reckless and careless use of chloroform in parturition, and for fear that there might be an evil result, believe that the same scientific principles and careful method of giving it should guide us as in general surgery.

According to these statements, and I am convinced that they are sustained by the experience of the majority of the profession, pregnancy, particularly during the stage of parturition, does in a large degree render the woman immune from the evil effects of chloroform. This having

been established as a fact in the therapeutics of chloroform, it remains to be determined what is there in the state of pregnancy or parturition that gives the parturient patient this immunity.

In the early pages of this paper the extraordinary development of the vaso-motor and circulatory systems in the pregnant woman was alluded to, with its wonderful arterial tension and high blood pressure. The pulse, even of the most delicate pregnant woman, is often as hard, full and strong as that of the most robust men. In a paper read last November before the Southern Surgical and Gynæcological Association on the action of chloroform on the exposed human brain, I showed very conclusively that the anæsthetic action of chloroform on that organ was invariably to produce anæmia of its circulation, reduction of arterial tension, and diminution of blood pressure, so that always under full anæsthesia the brain becomes anæmic to a degree that in extreme cases there is an enormous and dangerous reduction of circulation preceding general collapse. I am therefore constrained to believe that in this wonderful development of force, strength and power of the pregnant woman in her vaso-motor system, lies her immunity from the toxic action of chloroform. Every degree acquired of additional strength in the vaso-motor system gives her increased immunity. It is this newly acquired force of the vaso-motor system of the pregnant woman which enables her to resist the toxic action of chloro-

form to an extraordinary extent, which prevents extreme depression of arterial tension, and consequently excessive and dangerous anæmia of the brain and spinal cord.

In the cases alluded to of extensive injury of the cranium and the brain, in which, while chloroform was being used, I had a perfect ocular demonstration of its action on the functions of the brain during its administration of three or four times in each case, reduction of arterial tension, blood pressure and vaso-motor force in the arteries invariably preceded a state of anæmia of the brain, and this extreme anæmia of the brain, suspension of pulsation and hæmorrhage, always preceded tendency to general collapse.

These facts, I think, indicate to us very clearly that in chloroform anæsthesia, anæmia of the brain to an extreme degree always precedes dangerous chloroform narcosis and collapse, and at the same time that so long as the vaso-motor force remains intact in sufficient force to sustain the circulation in the brain and medulla, life will be sustained.

In my experiments with chloroform in cases cited of injury of the brain, there were two occasions in one and one occasion in the other on which there was alarming collapse, with almost entire suspension of respiration and cardiac action. Preceding these symptoms, in every instance there was marked reduction of vaso-motor force, arterial tension and blood pressure, and diminution of cardiac power. In all my experience

in the use of chloroform in parturition, no matter to what extent the agent was pushed, I have never witnessed this extreme reduction of cardiac and vaso-motor force that I have in general surgery.

The primary action of chloroform is on the cortex of the brain, the seat of consciousness and sensation. For the relief of the pains of parturition all we have to do is to bring the cortex under a state of anæsthesia, without extending its influence so far as to involve the reflex functions of the cord. This is equally true of anæsthesia of general surgery. By watching the action of the remedy we are enabled to confine its influence to the cortex without infringing on the functions of the cord or vaso-motor system. This is all that is desired to relieve pain and to render the act of labor more comfortable and easy for our patient. On the contrary, if we desire to relax excessive rigidity of the soft parts, or in case of convulsive action, to control that, we must extend our anæsthetic influence further and bring under its power the reflex functions of the cord itself. So long as we confine our anæsthetic to the cortex alone we cannot accomplish these objects. But immediately the cord is brought under its influence complete muscular relaxation follows.

We will now consider the question of anæsthesia in its practical bearing and influence on the process of parturition.

Is the use of chloroform in parturition justifiable for the relief of pain alone?

This is the first question that presents itself for our consideration. I believe that it is, but not in every case. For instance, there are cases where the pains are slight, the conditions all favorable, the passages spacious, the labor rapid, in which it is unnecessary. But in every case where the labor is at all slow, painful, and not easy, I believe that it is not only justifiable, but that it would be inhuman to withhold it. This statement is based upon the fact that the mortality from chloroform anæsthesia in labor is so very small, not probably amounting to one in millions, we certainly can risk so little for so much good.

I know that there are those who oppose its use in parturition *in toto*, but I believe without good and just reasons.

Pain is the great terror of parturition, and, if it could be robbed of this feature alone, it would be converted into a very simple and easy process. For some years before I adopted anæsthesia in my obstetrical practice, I have, time and again, sat by the bedside of women in the throes of parturition and listened, often with anguish to myself, to their cries for relief from pain, heard their moanings from almost insufferable agony, for hours of such scenes that impressed themselves upon my memory in a manner never to be forgotten. With chloroform at hand and with my familiarity with its action, I never have to pass through such painful scenes now. I have tried in past years many substitutes for chloroform

to relieve the pain of parturition, but have never found one yet. I am convinced that it is the *anæsthetic* of all others peculiarly appropriate to the parturient state. It is clean in its action; does not cause congestion of either the brain, the lungs or kidneys, but markedly diminishes the tendency to congestion of the brain.

Does the action of chloroform facilitate the process of parturition?

I believe that as a rule it does. I am convinced that in a great majority of cases it does shorten the duration of parturition. I know that it is the opinion of some that its action is to reduce the strength of uterine contraction and in this way retard the process of parturition. It has been my experience that while it relieves pain, its use may be so graduated as to not impair uterine contraction. Acting on the cortex of the brain alone and on the reflex functions of the cord are two different things. Thus we can abolish sensation without affecting reflex action. I believe that with care and judgment we can confine the action of chloroform to the cortex alone, the seat of sensation, and leave intact the reflex functions and the contractive force of the uterus.

I have no statistics to guide me in this matter, but my personal experience in the administration of chloroform in parturition leads me to believe that it not only makes labor easier, but that in the average it shortens the duration of that process. If then, chloroform is capable of rendering labor easier, more bearable to the

patient, and can shorten its duration one hour, even thirty minutes, its application is justifiable when we consider the very small risk incurred in giving it.

In certain conditions I know that it can shorten the duration of labor. One of these conditions is rigidity of the soft parts, and another is irregular contraction of the uterine muscular fibres, or spasmodic contraction of certain sets of fibres and relaxation of other sets, a condition that may protract labor indefinitely. The spasmodic contraction of certain muscular fibres of the uterus and relaxation of others is not an unfrequent state during protracted labor, and is a similar condition to that which produces the hour glass contraction after labor. Chloroform is capable of equalizing uterine contraction and of preventing irregular spasmodic contraction, and in this way facilitating parturition.

Its well known power to overcome and relax muscular rigidity no one can doubt. In illustration of this fact, I have repeatedly in my experience seen cases attended with rigidity of the soft parts where the process of labor was stationary—it might be for an hour or more or even hours—when chloroform was given in such quantities as to produce muscular relaxation, the labor would progress rapidly towards a termination.

At what stages of parturition is chloroform applicable?

To relieve excessive pain it is applicable at any stage. But to induce relaxation of muscular rigidity it is

applicable in unusual rigidity of the os uteri, and in extreme rigidity of the perineum when the foetal head begins to press on that body. When the object of giving chloroform is to relieve pain only, it should be given in small quantities at the beginning of each pain and left off when the pain ceases. But when we desire to overcome muscular rigidity the patient must be subjected fully to its influence. In the case of extreme contraction of the os uteri, or great rigidity of the tissues of the pelvic floor, no half-way procedure will accomplish anything. The patient then must be brought sufficiently under its influence to at least partially suspend reflex action when complete muscular relaxation follows, just as we would do in reducing a dislocation.

When there is perfect accommodation between uterine force and muscular relaxation in a normal pelvis, labor proceeds rapidly, easily and successfully. On the contrary, when this accommodation is disturbed, when for instance uterine contractile force is feeble, and perineal muscular tension is excessive, labor proceeds slowly and painfully. The action of chloroform in this class of cases is to bring this accommodation between uterine force and pelvic resistance to a more normal standard by reducing muscular tension. Leaving out of question congenital defects or those caused by disease in the pelvic bones, the vast majority of tedious and difficult labors will be found to be due to rigidity of the muscular structures of the pelvis, or inefficiency of uterine

contraction. We often see these conditions existing together. Nineteen out of twenty cases of instrumental delivery in my personal experience have been due to excessive muscular rigidity of perineum. In these particular cases in my experience the action of chloroform has been to cause perineal relaxation, to reduce muscular resistance, to bring about accommodation between force and resistance without materially impairing that force on the part of the uterus.

Does chloroform tend to suspend uterine contraction?

There can be no doubt that chloroform may be given in labor in a manner either to relieve pain and to leave uterine contractile force intact, or to both suppress pain and uterine rhythmic contraction, so as to, for a time, suspend parturition.

Rhythmic uterine contraction is an essential reflex function, and we know that the different nervous functions come under the influence of chloroform in consecutive order,—sensation first, then reflex action, and finally vaso-motor action. Because of this fact we can, as a rule, relieve the pains of labor without impairing the force of uterine contraction. All practical obstetricians have observed patients in labor when under chloroform, where there was entire relief from pain, while at the same time the rhythmic contractions of the uterus, and all the symptoms of active tenesmus were in full operation. I believe that this is the ideal state of chloroform anæsthesia in labor, and I am convinced that chloroform may be so

administered always as to relieve pain and leave the reflex functions unimpaired. Again, I believe that the reflex functions of the parturient patient are far more resistant to the toxic action of chloroform than in ordinary cases, and that it is more difficult to suspend them. This fact gives us a decided advantage in giving chloroform in labor, simply to relieve pain without interrupting the progress of parturition.

My experience has been that when the uterine contractions have been for the time suspended by the too free use of chloroform, when this influence subsided, uterine contractile force returned with renewed and additional vigor to perform the work to be accomplished.

Does the action of chloroform tend to promote or prevent post partum hæmorrhage?

This constitutes one of the most important questions connected with the therapeutic action of chloroform in parturition. If it tends to promote hæmorrhage, then this fact increases the dangers of its use in this condition. From my personal experience, I can say this much relative to this question,—many times after its administration in parturition, when pushed to the extent of causing entire unconsciousness at the time of birth,—that in not a single case have I observed a greater tendency to hæmorrhage, or any greater difficulty in producing firm uterine contraction, than when it was not used.

So far as this question is concerned I can speak alone from personal expe-

rience, and any personal experience in a large number of cases, extending over a long term of years, is of some value in settling important questions. High authority on the action of chloroform on the circulation is, that it is a vaso-motor contractor. In my surgical practice the action of chloroform on the vessels rather tended to establish this view. Profound chloroform anæsthesia certainly does diminish surgical hæmorrhage. In my cases of injury of the skull and brain, under chloroform anæsthesia there was a marked diminution of cerebral hæmorrhage in every instance. Then, if it be true that chloroform is a vaso-motor contractor, this, it appears to me would decide this important question.

Does the action of chloroform in parturition tend to prevent or promote laceration of the os uteri or perineum?

Are lacerations more common under the present method of delivery under anæsthesia or under the old system of delivery without anæsthetics. I have no reliable statistical data bearing on this subject to guide me, but I will state here that I have practiced under both the old system and the new, and am enabled to state, positively, that all of the bad cases of laceration of os uteri and perineum have occurred in cases where no chloroform was given. Many of the worst cases of laceration of these organs occurred in cases of rapid birth before my arrival. I am decidedly of the opinion that thorough relaxation of the structures of the pelvic floor constitutes the best security

against injuries of this kind, and I know of no agent that is capable of producing that extreme relaxation of muscular tissue like chloroform, and therefore placing the patient in a condition most favorable for the prevention of lacerations. I will briefly cite the case of Mrs. T., a young married woman, who had an accidental abortion at five months of pregnancy. I was called to her about eight hours after, and found her with a retained placenta. The perineum was intensely rigid, and the ostium vaginæ closely contracted. The vagina was narrow, and os uteri was rigidly contracted on a protruding umbilical cord. I determined to place the patient thoroughly under the influence of chloroform, with the hope that it would produce sufficient relaxation of the soft parts to enable me to insert the fingers into the uterus and remove the retained placenta. While the patient was under the profound influence of chloroform, to my surprise I found complete relaxation of the perineum, vagina and os uteri. These tissues were in such an extremely flaccid condition that I was enabled with perfect ease to pass my hand not only into the vagina, but into the uterus, which was equally as flaccid, grasp the placenta, detach it from its adhesions and remove it safely at five months of pregnancy. Without the influences of chloroform, this operation could not have been performed. During my past professional life I have had occasion to test all the various methods proposed by different authorities for the pre-

vention of laceration of the perineum. I have found them more or less defective, some entirely untrustworthy. For some years past the methods which I have adopted with the most satisfaction was to retract the perineum with the fingers hooked into the vagina back towards the rectum forcibly at each pain, so as to maintain a continuous relaxing influence of the perineum until the foetal head presses on that body. When it reaches that stage then the perineum will have been very generally relaxed. At this point the patient is kept under the influence of the anæsthetic until the head begins to protrude from the vulva when it is suspended. In my hands this mechanical dilatation of the perineum, combined with the relaxing influence of the anæsthetic, has been the means of preventing more lacerations than any other method that I have tried up to this time.

In conclusion, I can truly say that

after a long and favorable experience in the use of chloroform in parturition, that I have found it not only a blessing to the patient but to the physician also. Without the means of relieving human suffering what a dreary, unsatisfactory and repulsive life that of a physician would be. Yet for ages and ages the lot of the woman in the throes of parturition was to suffer, to bear, and submit to its terrible tortures, hopeless of relief until the end came.

For the past half century the achievements of medical science in the discovery and perfection of remedies to relieve human suffering, to improve human health, and prolong human life, have astounded the civilized world, and are something for our profession to be proud of; and one of the greatest of all these achievements is the discovery of chloroform.

The Treatment of Gonorrhœal Infections in the Female by Permanganate of Potassium.

A CLINICAL LECTURE DELIVERED AT THE SUFFOLK DISPENSARY BY
CHARLES GREENE CUMSTON, B. M. S., M. D.,

Instructor in Clinical Gynecology, Tufts' College; Member of the Société Française d' Electrothérapie.

GENTLEMEN:—This little girl of ten years of age has been brought to us on account of vaginal discharge, which, according to the child (and in these cases you always should be prudent in accepting the statements of children), came on a week ago without any cause. Her health is fairly good, but the weak condition of her eyes and build lead me to consider her as lymphatic. She complains of no pain on urinating and no pruritus or burning sensation about the vulva.

On examination, we perceive that the hymen is intact, that the orifice of the vulva is in a condition of active hyperemia. A little yellow pus is seen coming through the orifice of the hymen, but when I ask her to cough it gushes out in great quantity.

Now, gentlemen, what did I do in this case? I did not push the child with questions, for she probably would have lied about the cause of this condition of affairs and I might by so doing put ideas into the child's mind that were not already there, if she has not been abused by some boy or man.

I simply took a drop of pus on a platinum needle, made a cover-slip

preparation stained with Loeffler's methyl blue solution and examined it under the microscope, with what result?

I found the gonococcus in considerable numbers and the diagnosis was made.

This is the course that I strongly advise you to employ in these cases, as you thus avoid useless questioning and arrive at a positive and speedy diagnosis of the nature of the affection present.

This case is most interesting in the pathological and medico-legal point of view, but these questions I shall leave aside today, as I desire to speak to you of a special treatment of gonorrhœa, namely by permanganate of potassium, which has been put forward recently by several French physicians, notably by Dr. Janet.

I have employed this treatment for some time in gonorrhœa of the male, and lately since reading the reports of its application in gonorrhœal infections in women, I have put it to test in several cases with excellent results.

You are all aware that gonorrhœal infections in women present a very considerable gravity. The great number of orifices and glands about the vagina and urethra make good

hiding places for the gonococcus to locate and multiply. The communication with the peritoneal cavity by means of the uterus and tubes from the external genital organs exposes the patient to extremely serious complications.

When you are consulted for a trouble which you suppose to be gonorrhœa, you should make a most careful examination in order to determine the parts that are invaded by Neisser's organism, for if you intend instituting an antiseptic treatment, your antiseptics must be complete, or else do not undertake it.

To overlook the treatment of an orifice is to put yourselves in the unhappy position of seeing all those that you have treated reinfected by this remaining neglected focus.

Your treatment should be methodically applied, and, following Tixeront, you will proceed as follows: firstly, disinfection of the urethral and peri-urethral glands; secondly, disinfection of Bartholin's glands; thirdly, disinfection of the vagina and uterus.

Up to within a short time, gonorrhœa in the female was considered as very infrequent. The older writers thought that the malady resided in the vagina, and on account of the considerable discharge from this cavity the accompanying discharge from the urethra was overlooked. The urethritis was not noticed because the acute symptoms are not complained of by the patient, probably on account of the little urethral surface in the female and also because the duration of the acute stage is always of short duration in the weaker sex.

But the researches of many authorities in France and Germany have established in an unmistakable manner that in more than 50 per cent. of the cases the urethra has been invaded.

The chronic form is far more frequently met with, the proportion being, according to Chéron, about five of the former to one of acute urethritis. The external orifice of the female urethra is surrounded by follicles and minute tubular glands, the so-called Skénès glands, and it is precisely in these glands that the gonococcus becomes established.

In 1864 Guérin had already described the inflammation of the peri-urethral glands, and of late quite a number of memoirs have appeared regarding this pathological condition.

In making a differential diagnosis of these various affections, microscopical examination of the discharges is of greatest value, as the gonococcus will be discovered if it be present in the slightest secretion; consequently I think it would be well for you to carry out my plan as you have seen me do in the case of our little patient.

The symptoms of gonorrhœal urethritis are well known to you, as they are practically the same in women as in men, with the exception of a much less intensity and general reaction in the former. Now, I have told you to examine microscopically the discharges, and my reason, among others, is, that by this means you will correctly determine the stage at which the affection has arrived. For example, in the first stage you will find the gonococcus, in the second there

will be various organisms present, while in the third you will only find altered anatomical elements. Consequently your treatment will vary according to the stage of the disease, and I will now trace it out for you.

Treatment of the stage with the gonococcus. When you have found the organism in question, a urethral and vesical irrigation should be made with a solution of permanganate of potassium. The strength of the solution must vary from 1 per 1000 to 1 per 2000, according to the given case, and the quantity at each irrigation should be at least one litre. The irrigation should be practiced every day, the usual duration of treatment being from ten days to two weeks or thereabout.

You will notice that the discharge passes through successive changes before completely disappearing. During the first few days it becomes opaline and more watery, while the gonococcus generally is no longer to be found after the fourth or fifth irrigation.

The patient should then be carefully watched for the week following treatment, as is recommended by Dr. Janet, and after this lapse of time he advises testing the cure by a slight reaction on the mucous membrane of the urethra, in order to ascertain if the gonococcus has entirely disappeared.

This reaction is obtained by the instillation of a few drops of a 1 per cent. solution of nitrate of silver into the urethra, or by allowing the patient to drink several glasses of beer. If the reaction which takes place shows the gonococcus to be ab-

sent in the resulting discharge a cure may be considered as obtained.

We now come to the treatment of the second stage, in which many varieties of organisms may be present in the discharge. On account of the proximity of the vagina with the urethra, the latter is continually bathed in the mucous secretions of the genital organs, and, as you probably know, these secretions afford a most excellent culture media for infectious bacteria; consequently it frequently happens that it is infected by this means, the infection showing itself by a slight discharge, in which, microscopically, you will be able to make out a number of varieties of bacteria.

This form of urethral infection is easily controlled by a 1 in 20,000 solution of bichloride of mercury, with which the bladder should be irrigated.

The third and last stage is, as I have already said, that in which the microscope reveals only anatomical elements, such as round epithelial cells, leucocytes, glandular *débris*, iodophile cells, etc.

In this case the object of your treatment must be to modify the mucous membrane of the urethra, and I consider, with Tixeront, that a 1 per cent. solution of ichthyol is the best preparation for accomplishing this. It should be used in the form of injections, a glass syringe being used.

The treatment of infection of the peri-urethral and Bartholini's glands should be directed in such a manner that the antiseptic will penetrate inside the gland. In order to attain this result you should begin by press-

ing out with the fingers the contents of the gland. When this is accomplished, you introduce the needle of an Anel's syringe, such as is used by oculists, into the orifice of the gland, and the solution of permanganate of potassium, which should be strong, say 1 per cent., is to be quickly and forcibly pushed in. The quantity of solution for each gland is one cubic centimetre.

If after a few trials the gonococcus does not disappear from the secretions the gland should be destroyed by a galvano-cautery, as advised by Dr. Janet. To do this, a small platinum needle is inserted in the gland and the current turned on.

I have now finished with the treatment of urethritis and will now pass to the important chapter of gonorrheal infection of the uterus.

This organ possesses many glands, which are especially deep seated in the cervix and beside the endometrium in rich infolds. All these anatomical conditions offer excellent soil for Neisser's organism to develop in.

Gonorrhœal metritis may develop without a præexisting vaginitis or urethritis, by direct inoculation in the cavity of the cervix. This is an important fact for you to bear in mind, as this form is met with often in young married women, and, from my personal experience with gonorrhœal metritis, I am inclined to believe that it is produced by *gleet* in the husband, so that although his urethral discharge may amount to only a drop or two in the twenty-four hours, the constant inoculation of perhaps only a trace of mucus from

the urethra at each coitus, ultimately results in a more or less complete infection. I have many personal cases of this description, mostly occurring among the better class of people, and which I have carefully examined, both as to the condition of the husband as well as the wife.

The spreading of the disease to the tubes and pelvic peritoneum should always be present in your mind when making your prognosis and the treatment of a gonorrhœal metritis, which, when the lesions are not advanced, is not very difficult, may become extremely so, when the adnexa are invaded, because the gonococcus from the tubes may reinfect the uterus when this organ has been cured of the disease. Thus the infection after being ascendant becomes descendant.

This possibility must not discourage you in your treatment. Continue your disinfection of the uterus, for the tubes do not contain glands and the gonococcus cannot live long in them, at least in most cases.

As the uterus communicates freely with the vagina, which is always the home of many infectious organisms, the uterus may be reinfecting from this canal after treatment by the permanganate of potassium. You will consequently watch closely the condition of things for a few days after completing your treatment.

Now, there is no doubt in my mind that intra-uterine irrigations of permanganate of potassium have an effect on gonorrhœal infection that is to be had with no other antiseptic. But the great point is to have a flow of sufficient quantity and force, and this can only be accomplished with

Rotunda Hospital douche. This instrument may be adapted to any pitcher or bowl that is at hand, and its value in surgery and obstetrics is without compare.

There are very few physicians or nurses that know what a good douche is. I even know of the ordinary enema syringe being used for intra-uterine irrigation. To say the least, this is most barbarous practice, and I trust that none of you will ever be guilty of such unsurgical technique. Not only is there danger of pumping up air into the cavity of the uterus, but the force and quality of the jet leave much to be desired. Then you have the fountain syringe, which is a decided improvement over the former douche, but which does not permit of a sufficient flow of liquid, owing to the small diameter of the rubber tubing and also no stop-cock allowing the quantity of liquid to be regulated. The Rotunda douche leaves nothing to be desired. With it you can obtain a very considerable or very small jet of liquid, and, above all, it is easily kept clean and is portable. So much for the douche.

With abundant irrigation (and here I differ from Dr. Janet, for I employ from two to three litres at each seance, the former only uses about one litre, if I am not mistaken) you clean the surface of the endometrium of the mucous *débris* and fibrous coagulations which are excellent culture media for the gonococcus, and the antiseptic comes directly in contact with the infected tissue.

As to the intra-uterine catheter to be employed I have no particular choice, those of Fritsch, Collin, Budin, Rever-

din or Reynolds are perhaps the best. If, however, you employ the latter instrument, I think it well to give it the necessary curve for the uterus you are treating.

When the cervix is sufficiently permeable to admit of an easy introduction of the catheter, which should be of small calibre, it is better to irrigate without dilating, so as to avoid all traumatism to the uterus, which is most important. The end of the sound is pushed gently up to the fundus and the stop-cock is slowly opened. The strength of the solution of the permanganate should be from 1 to 3000 or 2000, while the level of the solution should be about four feet above the patient.

You must watch carefully to see that the liquid runs out as fast as it enters, and, if it does not, you must stop the flow and find out where the obstruction is. The first irrigations are rather painful, but the last do not trouble the patient much.

When the uterus will not admit the easy introduction of the catheter, dilatation becomes necessary. To obtain this you may employ Hegar's sounds or laminaria. After dilatation is sufficient, the technique of the irrigation is the same as I have just described. There are also here three stages of discharge the same as I pointed out in the commencement of this lecture, and I will not repeat them again. To each of these three stages corresponds a treatment.

While the gonococcus is present, the strength of the solution of permanganate will vary from 1 to 2000 or 3000, according to the patient, and in cases where the reaction is

not intense, you may even employ 1 to 1000. The duration of the treatment cannot be set down, but it varies from eight to fourteen irrigations, one being made daily.

Microscopical examination of the discharge should be made daily, and this will furnish you with the most important indications as to the strength of your solution and the length of time that the douching is to be kept up.

If the metritis is very acute with considerable abdominal pain, you must wait a few days until the acute symptoms have subsided, and to obtain this I know of nothing better than the application of equal parts of the mercurial and belladonna ointment over the abdomen, with absolute rest in bed.

It is quite safe to say that after fourteen irrigations the gonococcus is destroyed and the treatment can be discontinued, after which the patient should be carefully watched for four or five days.

During this time a slight discharge may appear, containing a number of varieties of bacteria. The best means to avoid this discharge is to order a disinfection of the vagina morning and evening, with a 1 in 10,000 solution of bichloride of mercury.

If the discharge persists in spite of the vaginal douching, a few applications of a 10 per cent. solution of ichthyol should be made to the endometrium.

In closing, I would say that the curette has its indications, and that the above treatment I only advocate in the more recent infections. In old cases of metritis, Neisser's organism has disappeared and the permanganate would have no action.

There are many other methods of treating gonorrheal metritis, by applications of carbolic acid, nitric acid, chloride of zinc either in solution or in the form of a paste made up into a cayon to be introduced into the cavity of the uterus, but these methods are as dangerous as they are useless.

In the case of our little patient I have ordered daily irrigations of permanganate of potassium at the strength of 1 to 2000, and I trust that I can show you the remarkable effect of the treatment.

(The patient was seen one week later, the discharge had disappeared, and examination of the urethral and vaginal secretions could reveal no trace of the gonococcus. The child did not complain of any pain produced by the permanganate.)

SOCIETY PROCEEDINGS.

Massachusetts Medical Society, Suffolk District.—The Section for Obstetrics and Diseases of Women.

JAMES M. JACKSON, M. D., SECRETARY.

REGULAR meeting, Wednesday, April 24, 1895, Dr. Geo. H. Washburn in the chair.

PROGRESS OF GYNÆCOLOGY DURING THE LAST DECADE. BY DR. E. W. CUSHING.

Most of those whom I see present probably have not any realizing sense of the pre-antiseptic times such as used to obtain in the seventies, when every hospital ward had a peculiar smell when every wound suppurated, when a compound fracture would be examined by the whole staff before the hands were washed. In 1882 or 1883 we began to hear of the widespread results of antiseptics, and then the bacteria of suppuration were discovered by Ogston and Passet and others. That went to my head so much that in 1885 I went to Germany to study this particular subject in connection with operative gynæcology. At that time antiseptics was in full operation there, but was to a certain extent overdone, as we have since found out. Abdominal operations, for instance, were performed under a blinding, smothering spray of carbolic acid, and the abdomen afterwards flushed out by a 2 per cent. carbolic solution. We know now that these are unnecessary and injurious. Plastic operations were at that time in Germany done under an irrigation of 1 to 1000 or 1 to 2000 sublimate solution with results that seemed little less than marvelous as compared with the

previous history of cases. In the old times even a simple thing like sewing of the cervix, or curettment of the uterus, or a perineum operation, was not devoid of danger, and the ease and comfort with which women recovered under the antiseptic irrigation was hardly believed. Although this was fully developed in Germany at that time it had not as yet become prevalent in England, in France or in this country. I was in France in 1885 and there was not such a thing in all Paris as a gynæcological service. Anybody in any hospital who had a taste for doing those operations did them with more or less efficacy. Apostoli was just beginning to be heard of in electricity. Péan was still a general surgeon. In England there was great development of abdominal surgery under Lawson Tait, but except for that gynæcology in England was mostly a faint reflection of what had come from America. In this country the traditions of Sims and the practice of Emmet and Goodell were in full force and had not as yet been much interfered with. Operations were done in the Sims' lateral position and silver wire was largely used. The colporrhaphies and other denudations were done by cutting off little strips with curved scissors. It was a great change from all that to the dorsal position as used in Germany, the irrigation and the method of amputation of the cervix after Schroeder, the perineum and colporrhapy method after Martin, etc.

It was found by degrees that as for the irrigation it was not necessary to use it so strong. In the first place, it was bad for the hands of the operator, made the nails brittle and the skin harsh, and by degrees the solution was weakened, until it was found that if the parts were thoroughly cleaned beforehand, that after the incision was made in clean cases, boiled water would do just about as well. In fact, the general principle has been evolved that any solution which is strong enough and long enough continued to kill a pathogenic germ is strong enough to injure the superficial layer of cells in the incision, and thereby to prevent the best results of healing. Therefore, all attention began to be paid to getting the parts clean beforehand, and if once clean beforehand they did not require any chemical irrigant solution, except just at the end after closure of all raw surfaces.

Another great advance was the use of iodoform and iodoform gauze. Drainage from below, in the abdomen, had always been done at a disadvantage, because rubber tubing was used, and the intestines would fall down and stop up the tubing so much so that Bardenheuer, in perfecting the operation of total hysterectomy, invented a little catgut net to protect the tubing. The iodoform gauze, in a hundred ways, has been of immense benefit in all this work.

With all this there came a change in the theory of disease, and a change in the theory of treatment from what you might call the vasomotor and mechanical to a theory of infection and surgical treatment; that is to say, as near as I can understand, in the old times the theory was that the uterus, from some perversity or the laxity of the ligaments, got heavy and got displaced; the displacement produced congestion, the congestion started up increased secretion, and

the increased secretion started up erosion of the cervix, whereas the tendency afterwards became to trace the endometritis to infection of some sort, believing that the congestion is caused by the invasion of germs, that the resulting heaviness causes the displacement, which is secondary and not primary.

Coming with this there was a great advance in the diagnosis of internal affections, which began when Lawson Tait astonished the world by saying he could tell that the tubes were diseased by touch, although he could not explain how, and at first nobody would believe him. From that there came the great advance in diagnosis with bimanual palpation, so that what we considered previously as retroversions and lateral displacements and anteversions, we found to be, in a large degree, affections of the tubes and ovaries. The whole former theory of anteversions has been abandoned as far as I know. Now we hold that the uterus when it is in pathological anteversion is so because it is pushed there or held there somehow. The uterus, in retroversion is not merely sagging back, but it is found in all the cases that really give a great amount of trouble; the uterus is pushed back or held back or let down by the weakening of the perineum. Therefore, there came up a great and general discrediting of the pessary treatment. I remember when I used to be associated with Dr. Warner, in 1882 and 1883, the treatment that there was then. I once told him his whole clientele could be cured in a fortnight of operating. It was a whole series of ladies, one with weak perineum and the uterus sagging back, another with "prolapsed ovary" and a little salpingitis, and another with "adherent retroversion" or a "cystitis" caused by inflammation of the appendage or pressure of a fibroid; one had this and another that, but all had some-

thing which we should now recognize and treat in a different way instead of painting with iodine and putting in a little cotton and glycerine and telling them to come again. That whole system of treatment has been very much changed by the more accurate diagnosis. Under these conditions a great many of the affections which were simply considered as versions of one kind and another are now found to be either diseases of the tubes, or small tumors, or growths in the uterus which push it or hold it, or press on the bladder or interfere in some way, and cause the symptoms which otherwise formerly, by just examining by one finger, we laid down to displacements. The difference in diagnosis came from using two hands instead of one, and from the knowledge gained by abdominal sections.

The fact that the endometric conditions were considered infectious led to an immense development of curettement of the uterus, and that again went to an extreme under the lead of the lamented Dr. Goodell, who somehow got the idea that the disease was largely owing to the narrowness of the cervix and required a fearful and wonderful dilatation. He invented a sort of veterinary dilator, and the unhappy cervix is even now stretched and separated until you can put your finger in. All that in my humble judgment is entirely unnecessary. The reason that a woman with a narrow cervix suffers is not owing to the narrow cervix, but to damming of the secretions, and if the cervix is dilated enough to get the curette in and it is curetted and entirely disinfected the endometritis will get better without excessive dilatation, as I have had occasion to observe. Still more in other affections where there is endometritis without any particular narrowing of the cervix the only office of the dilator is to get the curette in, and it

seems very strange to me that so much importance should be laid to the dilatation and in these later days to drainage with gauze. I know that for years and years Martin has been curetting and dilating uteri in Berlin with the happiest results. I have done a great many here also with an activity which I trust was not pernicious, when suddenly it was claimed by Dr. Polk of New York that there must be gauze thrust into the uterus. From that has arisen an elaborate system of tubes by which gauze can be put into the uterus, and if the gauze is put there and left long enough there will be secretion. But the happiest results are obtained by curettement, cleaning out the uterus and leaving it alone. The gauze in my experience, and I have tried it faithfully, only has the affect of setting up uterine contractions; it does not drain anything but serum; it will remove certain *débris* with it, but if you are careful with the curette that is removed beforehand.

In the next place came the recognition of salpingitis and oöphoro-salpingitis, in distinction from what was called cellulitis. There is nothing new in all this. Bernutz and Goupil had already described years before the pathology of the Fallopian tubes. It had been forgotten, and under the guidance of Emmet nearly everything was set down as cellulitis. That theory was this, that when one examined and found a mass at the side of the uterus it was supposed that was in the parametrium. That was supposed to be between the folds of the broad ligament along with the lymphatics and the vessels. It was found, however, when the laparotomists got at work and rolled out the pus tubes and found in these cases no thickening in the broad ligament, that that mass was the tube and ovaries rolled back together, adherent behind the broad ligament. That there is such a thing as cellulitis and

parametritis is not to be denied, but it is a rare thing, a sequel of labor or abortion, and in the rarest case occurring in any other way.

Then came the great operative era for pyosalpinx, beginning in 1886 and 1887 in this country. Price got at work in Philadelphia, and he and his friends had one hundred cases in the slums without a death. There was disposition to suppress him at first. It seemed wrong to the powers that were that a woman should get well of a capital operation outside of a hospital. Reed in Cincinnati, Polk and Wylie in New York, began a very extended practice of removing the tubes for salpingitis. I began to perform this operation in 1887 and in March, 1888, I showed some twenty-eight specimens in this room, and I have kept it up ever since with many others in the city here, and certainly no change can be greater than the attitude of the profession to these cases. The diagnosis is rapidly made, operation is called for early, and the results are very much better.

Some years ago, when I reported three cases of pyosalpinx to the Obstetrical Society of Boston, in which there had been preëxistent opening into the bowel which had to be found and closed, one of our oldest and most respected surgeons asserted that, as far as he knew, cases of abscess that opened into the bowel did very well and closed up and healed. I think few would take that ground now. It is recognized as one of the most serious and dangerous complications for a woman to have an internal abscess opening and repeatedly opening into the bowel and wasting her life away. The cases are brought to the surgeon earlier, diagnoses made earlier; the fact that the woman has internal suppuration is considered a sufficient reason for operating, and the results are much better than they were when the cases were protracted and neglected.

The next question which came up, almost at the same time, 1887-88, was the early recognition of extra-uterine pregnancy. Early in 1888 I photographed and published the specimens which were preserved in the pathological museum in Harvard, some eight of them, and I had occasion to read the accounts of these cases by Dr. Jackson, and it was interesting to note how absolutely the affection as considered as a merely pathological subject. The idea of interference never, I presume, entered his mind or that of anybody. They were described as you would describe the case of a man who was struck by lightning. That was the end of it. Now everything is changed. Extra-uterine pregnancy is found to be no uncommon affair. Everybody is on the watch for it. The diagnosis is made immediately on rupture, often before rupture. There is hardly a meeting of the larger obstetrical societies in Philadelphia and New York where several cases are not reported. Formad, in the coroner's examinations, Philadelphia, discovered in one year fifteen or sixteen cases where women who had died suddenly were found to have ruptured extra-uterine pregnancy. More than that, the time-honored hæmatocele which we had already learned to recognize was later attributed, and is attributable in a large proportion of cases, to ruptured extra-uterine pregnancy. What the late Dr. Byford described with great care and learning as "metathymenia," or misplaced menstruation, is an almost classical description of extra-uterine pregnancy when it is not fatal. Not every extra-uterine pregnancy is fatal. In many cases the rupture is either between the folds of the broad ligament, or in a cavity previously shut off by adhesions, or so minute that the moderate hæmorrhage sets up a slight inflammation and causes adhesions which roof it off, so that the case does not

necessarily become fatal. I believe now that everybody except Dr. Goellet of New York has given up the theory that anything should be done with an extra-uterine pregnancy in its early stages, except to operate immediately. Dr. Engleman of St. Louis was one of the firm defenders of electrical treatment. He sent me for publication a photograph of a woman who had bled to death through a little opening in the tube which could have been closed with no difficulty whatever, and he abandoned electrical treatment thenceforth. Janvrin lost a case under electrical treatment, or between two applications, and to paraphrase the words of Dr. Worcester in reference to appendicitis, there are few now who "dare not to operate." Just how large a proportion of cases of hæmatocele are really cases of encapsulated hæmorrhage from extra-uterine pregnancy is not easy to determine. As we see and note the severer cases of extra-uterine pregnancy we are led to think that there must be others much lighter, and that the ordinary hæmatocele is probably connected with ectopic gestation.

About the same time, that is, 1887, there was introduced into this country vaginal hysterectomy for cancer. That of course had had some vogue for some years in Germany. Even in 1881 it was the subject of discussion between Schroeder and Freund, and in 1885 I remember the impression of almost recklessness made on me when Martin said he had adopted the rule to remove every uterus in which cancer was detected and proved by microscopic examination, that all his cases of high amputation for cancer of the cervix had suffered recurrence and died, and that in a large proportion of those in which he had been able to operate early in sound tissues the disease had not recurred. Martin came over and

read a paper at the Ninth International Medical Congress in 1887, and came to Boston at my invitation and performed three operations here. I began operating soon after, and in 1890 I here reported twenty-one cases, with two deaths. I have since had occasion to perform this operation a large number of times, and I think the rule all over the country is to immediately extirpate the uterus for cancer as soon as it is discovered, when it is possible to do so; if discovered early, so much the better. By extended observations it has been ascertained that the recurrence depends less on the extension of the disease than on the time during which it has existed. Few cases which have lasted a year fail to recur, even if the disease is limited, and it is quite possible to remove it. A large proportion of cases where the disease has lasted only a few months are entirely saved; just what proportion it is difficult to say. I think that over twenty-five per cent. of those on whom I have operated are still alive.

What shall I say with regard to the rise and decline of electricity in gynæcology? In 1885, Apostoli was just making himself known in Paris. Of course you remember that the brilliant and erratic Cutter, in Boston, with his bayonet electrodes, as far back as 1873, had begun to use strong galvanic currents on fibroids, and had achieved success when anything better than eighty per cent. of deaths was a success. Apostoli with great pains and zeal and scrupulous antisepsis achieved, and does achieve, good results in certain classes of cases. However, as a rule, it has not proved satisfactory except to a few, the principal reason being this, that for fibroids the danger of an extensive use of electricity is fully equal in most hands to that of hysterectomy. There are a few of us here who tried to use electricity thoroughly, but all gave it up. In the general use that

ensued, there were many who had some bad results. Chadwick reported his, and others had them and did not report them. Even in cases which seemed to improve under electricity, finally, after a year or two, it was found necessary to remove the tumors just the same. As a rule with electricity this much can be accomplished: Hæmorrhage can be checked in many cases, the nervous symptoms can be largely reduced; the woman, instead of being entirely woe-begone because she has a tumor, concludes that something is being done, and that she is not so badly off, after all. Few find much occasion for electricity in gynæcology, except for the simple palliation of certain cases. The use of the fine faradic current for pain is a success, as is the use of the coarse faradic current for strengthening the ligaments of the uterus.

Then came up another operation (and I speak with reserve and some embarrassment under the eye of my friend Dr. Blake), and that is the Alexander operation. That was suggested and practised by Alquié in France in the sixties and forgotten, came up through Alexander and Adams in 1883 and was a great card at the Ninth International Medical Congress in 1887. There, too, much more was expected of the operation than has been obtained. As Alexander originally promulgated it, it was of itself sufficient to cure very severe cases of procedentia. I published a picture of a case he treated where the uterus was hanging outside and it was supposed to be cured by this operation. It was recommended to be used for retroversion without regard to adhesions, and it was maintained in this room that if there were some adhesions they could be broken up through the rectum, and that if you could not get the round ligament in the inguinal canal you could follow along

the canal and get the ligament in the abdomen. Some of us had hernias. In some women the uterus was pulled too far forward and pressed on the bladder, and it was found that those little adhesions which we could lift up so easily were not things to be despised. The woman had the pain just the same, and finally the abdomen had to be opened; so that at present I think Alexander's operation has become restricted to cases in which you are quite sure there are no adhesions, in which the uterus is perfectly free and falls back merely from a certain laxity of the ligaments, and not from injury to the perineum or pelvic floor, and in which it can be replaced with readiness; there is a certain field for it in that class of cases. But what we had hoped of various of these things, to wit, electricity and Alexander's operation, has not been realized. At the same time the hopes which were entertained on the discovery of bacteria have not been realized in the way in which it was hoped. It was known for centuries back that there was a *materia peccans*, and then it was realized that there was something infectious, and then we supposed it might be a germ, and then we saw the germ, but the chief advantage of the discovery of the germs has not been where it was expected it would be. The things which were previously known as advantageous in suppuration did kill germs and do kill germs. The healing properties of carbolic acid and of sublimate were known before the germs were seen and cultivated. The main advantage in my opinion, of finding and seeing the germs has been with the rising generation that it has had its faith founded on sight. When you could show germs, cultivate and inoculate them and produce suppuration with them, the gospel of cleanliness was preached not merely as theory, but as

a practical living faith; and, after all, the further we get the more we come away from active germicides after operation. We know that infection is a palpable thing which can be found and destroyed, and not some mysterious influence lurking in the room and coming down to creep into our wounds in some inexplicable manner.

In regard to the changes in plastic work, the main points have been the substitution of Schroeder's amputation of the cervix for Emmet's repair of the cervix, and the anterior colporrhaphy by removing a solid piece instead of merely snipping off the mucous membrane, the posterior colporrhaphy running far up and narrowing the vagina instead of some simple removal of the outer layers of the mucous membrane. In regard to the anterior colporrhaphy, Sims at one time cut through the vaginal wall towards the bladder, and he was afraid he had injured his patient seriously. The practice has been, and I think among the adherents of Emmet's school and the New York Woman's Hospital is still, to catch up a little strip of the mucous membrane and pare it off until the place is denuded. That is different from the German operation of cutting clean through the muscular wall of the vagina down to the cellular tissue and bringing it together, and I should judge, as far as I know, that the German operation is preferable.

I may call attention to the fact that, in regard to the German system, we have right in America within six hours of Boston the third German city in the world, that is New York. Outside of Berlin and Vienna no city has so many Germans as New York, and the German theory and practice *in toto* can be found there, and therefore we have now growing up in this country an active concurrence between what you might call the adherents and disciples of the American

school of Sims and Emmet, and those of the German school, each working out certain things on their own lines, and without very much blending.

The introduction of buried catgut in layers, in gynecological operating, came in about the same time in 1887, and that also has not fulfilled all that was hoped of it. It is a beautiful thing, the catgut operation, but one must be very careful in the sterilization of the catgut. It is harder to sterilize than silk, and unless you are careful there are occasions when it suppurates and makes trouble, and if it is put in with the running stitch, it cuts off the circulation and then the wound reopens. I have found in my practice that the less one has to do with buried stitches, the better in the long run are the results.

I may say that my translation of Martin's work in the *ANNALS OF GYNÆCOLOGY* in 1887-1888, had a good deal to do with the introducing of the new pathology founded on accurate and minute bacteriological and microscopical investigations; the new views were soon taken up by men who were studying abroad and who brought home the same, and they came into the journals and found their way into a complete set of new text-books of which there are the "American System of Gynecology," by Mann, Garrigue's book, "Baldy's American Text-book of Gynecology," Coe's work and others.

A few words about hysterectomy: Perhaps the greatest change has been in regard to this operation. In 1885 it had a mortality of sixty per cent. more or less.

When Bantock came to this country in 1887, the extra-peritoneal treatment came into vogue, and was taken up by Price and others. Even deep tumors could be got out and treated in this way. Stimson, of New York, in 1888, first tied the uterine arteries in their continuity separately. Krug, Boldt and Polk, of

New York, were working at the same time on total extirpation of the uterus, and in 1892 that was spread abroad through the profession. In the short space between 1892 and 1895 the change has been made so thorough that I have only been able, in a correspondence with the principal hysterectomists of the country, to find four men who use the extra-peritoneal treatment, that is Price, and L. Smith, and Cordier, and Kellogg. Everybody else uses either total extirpation or the removal of all but a little of the cervix. The mortality has come down from eighty per cent. to sixty per cent., to fifty per cent., to thirty per cent. and twenty-three per cent. In 1891 and 1892, the average percentage of the best operators in this country was about twenty-three per cent. Lately there are runs of twenty and thirty cases without a death, and it has become one of the safest of operations, with a mortality in the best hands of less than ten per cent.

Concurrently with that has grown a difference in our opinions of fibroids. There came the knowledge of the damage caused by fibroids if allowed to grow, pressure on the ureters, stoppage of the bowels, complications with salpingitis, suppuration, death from apparently other causes, owing to weakening of the system from long-continued hæmorrhage, so that there is getting to be an opinion that it is best to have fibroids removed as soon as they begin to give trouble, as soon as they get to the size of the two fists and are evidently growing.

The latest change of all is the great spread of vaginal hysterectomy for other things than cancer. The operation has become so safe and simple that many patients who previously were condemned to perpetual suffering now are readily relieved in this way. Of these affections the chief are in the first place the small fibroids, and it is evident if we can

remove the small fibroid with almost absolute safety by the vagina we shall have no big fibroids to remove by the abdomen. Secondly, adherent retroversions, where the tubes are adherent and diseased so as to be functionally useless. The mere getting the uterus out is a matter of six to ten minutes, fastening off with catgut twenty minutes more. It is a simple and safe operation, provided ordinary skill and care are used and measures are taken to get drainage from the bottom of the cul-de-sac of Douglass. Finally comes the great burning question of the present moment, the use of vaginal hysterectomy for salpingitis, suppurating tubes, for inflamed and suppurating uteri. It has long been noticed that in a considerable proportion of cases in which the tubes are removed for suppuration there is a continuance of purulent discharge from the uterus, and the removal of this organ in the original abdominal operation is urged. If the tubes are removed and there still is trouble, it is a simple matter to remove the uterus from below at a later period; but the French have given this a much wider development, and are removing the uterus by vaginal hysterectomy for double salpingitis, with results which are admirable. The operation is much harder than the abdominal operation for the operator, but there is a very much less degree of shock to the patient.

As for obstetrics, I will only mention the treatment of uncontrollable vomiting of pregnancy by curetting, splitting the cervix and clearing out the uterus as you would treat it for a tumor. Dilate the cervix and take the child out as you would take a little polyp out, and wash out and complete the interference at once.

I will only allude to the great rise of symphyseotomy since 1893, and also the method of packing the uterus with iodoform gauze for hæmorrhage.

As a result of all these changes there has been a rearrangement of the relations between gynæcological specialists and general practitioners. The specialist of the present day is a consultant and a surgeon whose practice is by degrees devoted mostly to major operations. A new race of specialists is growing up similar to those in Germany who are trained by long and careful experience in hospitals to do the operating and examining, and make the diagnoses, and those are the men who in the future

will get the best results by the effect of their long and careful training, and will not be expected to take care of cases in their office.

On the other hand, the modern general practitioner, carefully educated and well-trained in post-graduate courses, is perfectly competent and entirely willing to give whatever general and local treatment may be required; and, if surgically inclined, he will probably perform such minor operations as come into his practice.

REVIEW OF GYNÆCOLOGY.

ARE THE UTERINE ENDS OF THE FALLOPIAN TUBES EVER PERVIOUS WHEN THE TUBES CONTAIN PUS?

Notwithstanding the recent emphatic declaration of one of our most noted gynæcologists to the contrary, numerous cases in which tubes are pervious are being reported. Dr. T. J. Watkins, of Chicago, says that while separating the adhesions of a pus tube on the left side he noticed that the tumor suddenly decreased in size without rupture. Fully four drachms of pus were forced out through the uterus into the vagina, over the vulva, and on to the operating table. He thinks that this case, however, could not have been relieved by curettement, drainage, massage or galvanism, because, first, the patient had an abscess of the opposite tube and ovary, and, second, because the walls of the left tube were so distended, adherent and thickened as to be incurable by any operation short of an abdominal section.

Dr. F. A. Glasgow, of St. Louis, practices dilating the cervix with

sterilized elm tents in these cases, saying, "we can gradually slip in tent after tent, first dipping them in glycerin or water for a moment, until the cervix is full. I now place a wad of cotton tied with a string just against the cervix; the tents are cut off to a length which will just permit them to entirely enter the os externum without pressing on the fundus; they have each a short string attached to them. This is kept up for a number of days, the patient being kept in bed. Sometimes the dilatation causes pain; often none. If, when the uterine canal is large enough to admit the finger, there is no discharge of pus with relief of the symptoms, I anæsthetize and curette. I now pack with gauze and repeat for a number of days. I cannot at present recall a case of tubal distention where I did not get some discharge after packing with gauze or dilating with tents for some time. Very often there is a very offensive watery discharge comes through the packing, even soaking into the bed. Every case is not permanently relieved."

MY EXPERIENCE WITH THE IMMEDIATE REPAIR OF UTERINE INJURY FOLLOWING LABOR. By A. PALMER DUDLEY, M. D.

In the February, 1895, issue of the *American Journal of Obstetrics*, Dr. Dudley states that he has performed immediate repair on 21 cases since 1889, and has yet to see the first bad results from such manipulation and repair of the uterus. He makes it his rule, while waiting for the placenta to be delivered (during which time he allows the patient to sleep under the influence of a few drops of chloroform), to examine the cervix, perineum, urethra, vestibule, etc., and if he finds a tear of the cervix, he entrusts the chloroform to an assistant, delivers the placenta, and, after thorough disinfection and aseptic precautions, repairs the rent with the patient in Sim's position and by the aid of a large Sim's speculum. He prefers No. 5 catgut for the sutures.

A series of five cases are reported to illustrate his methods and success, and he summarizes as follows:

1. Suturing of the lacerated cervix properly immediately after delivery will result in primary union of the same and prevent many of the evils that follow in the wake of a union by second intention. 2. The fear of septicæmia attending the manipulation of the cervix for the same, and the introduction of poisons which will induce septicæmia at the same time, is an unfounded one, and would be dissipated by giving such work a proper test. 3. It is a method of procedure more justifiable than an immediate repair of the perineum, which the profession of today universally advocates. 4. The securing of primary restoration of the laceration hastens involution, prevents subinvolution and the various forms of displacement which are induced by it in such an overweighted

organ. 5. That catgut is the proper suture and perfectly safe and reliable when properly prepared.

ACCOUCHEMENT FORCE.

Dr. J. Henry Carstens, in the *American Journal of Obstetrics*, March, 1895, calls attention again to a method of accomplishing the emptying of the uterus in abortions, or of producing abortion, that he has employed for years, and described before under the name of "Accouchement Forcé."

Having determined on the production of an abortion (which, he says, should not be done till after consultation), he proceeds by inducing profound chloroform anæsthesia, then dilating the cervix with some strong instrument, as the Erlanger-Goodell dilator, then introducing the finger or *fingers* through the cervix, removing the contents of the womb and cleaning its cavity of all shreds and *débris* by the curette, after which an application of pure carbolic acid is made to the interior.

The operation lasts, in his hands, but fifteen minutes in many cases, and is universally followed by good results.

After the seventh month this procedure is modified by dilating the cervix first with steel sounds until large enough to admit a rubber bag (Barnes' dilators for instance), which is filled with air and dilatation completed in that manner.

He asserts that the operation is absolutely safe if *aseptic and antiseptic* precautions are observed; and claims, as arguments in its favor, that the delivery is accomplished quickly, the woman suffers no pain, there is no anxiety and worry for the physician, and that there is no staying up at night, but that the time may be selected with reference to light, convenience, etc.

BOOK REVIEWS.

(All Exchanges and Books for Review should be sent to Dr. C. G. CUMSTON, 828 Beacon St., Boston.)

**MEDICINE. A MONTHLY JOURNAL
OF MEDICINE AND SURGERY.**

We have received the first number of this new publication, which is edited by Dr. Harold N. Moyer of Chicago. If this journal will continue as it has begun, it will be one of the best periodicals published in the United States.

The contributors to the first number are W. L. Brown, M. D.; D. A. K. Steele, M. D.; H. A. Hare, M. D.; G. Frank Lydson, M. D.; W. S. Christopher, M. D.; Seth Scott Bishop, M. D.

The journal is published by the enterprising George S. Davis, Esq., of Detroit, at the price of \$2.00 a year.

We wish every success to *Medicine* and have no doubt that it will attain it.

**DE L'HYSTERECTOMIE VAGINALE,
APPLIQUEE AU TRAITEMENT CHIR-
URGICAL DES LESIONS BILATER-
ALES DES ANNEXES DE L'UTERUS.**
By Dr. EMILE BAUDRON. Paris,
1894: Société d'Éditions Scienti-
fiques, 4 Rue Antoine-Dubois.
Price 10 frs. (\$2.00)

This volume of 401 pages is the most complete treatise on vaginal hysterectomy that has been published, with the exception of the excellent work by Prof. G. L. Richelot, which has already been reviewed in the *ANNALS*.

Dr. Baudron's work is based upon the first series of 200 cases performed by our excellent *confrère* Dr. Paul Ségond. The author justly calls vaginal hysterectomy, as is practiced

in France, *Péan's operation*, because it was planned and carried out by that famous operator.

After a good historical sketch on the subject, the author passes to a most detailed description of the various techniques due to Péan, Ségond, Müller-Quénu and Doyen, and also some modifications as to the technique of the operation, which are well put forth.

The results of the operation are next considered, both immediate and ultimate, while the operative complications are well discussed. The last two chapters of the work are taken up with the comparison of Péan's operation, with other surgical treatments of lesions of the adnexa, particularly laparotomy, and the indications for performing vaginal hysterectomy.

Then follow the detailed reports of the 200 cases and the statistics of laparotomies for suppurative lesions of the adnexa done at the Hôpital Bichat by Prof. Terrier and Hartmann during 1893.

Too much praise cannot be said of this well-written and conscientious monograph, from the reading of which the antagonists of vaginal hysterectomy would learn much that would be of service to them and their patients. The work is illustrated by excellent plates and figures.

A SYSTEM OF SURGERY. By AMERICAN AUTHORS. Edited by FREDERICK S. DENNIS, M. D., Professor of the Principles and Practice of Surgery, Bellevue Hospital Medical College, New York; President of the American Surgical Association, etc., assisted by JOHN S. BILLINGS, M. D., LL.D., D. C. L.,

Deputy Surgeon-General, U. S. A. To be completed in four imperial octavo volumes, containing about 900 pages, each with index. Profusely illustrated with figures in colors and in black. Volume I., 870 pages, 422 engravings and 2 colored plates. Price per volume: \$6.00 in cloth; \$7.00 in leather; \$8.50 in half morocco, gilt back and top. Full circular free to any address on application to the publishers.

The pages of the present volume indicate that careful study has been bestowed in planning the work so as to impress upon it a maximum of usefulness. Every surgical topic concerning which information could be desired will be found in its proper place, a result secured by a comprehensive system of indexing extant surgical literature prior to the preparation of the MS. In the method of dealing with the vast aggregate of subjects thus collected, a rational arrangement and a clear and concise style find room for a whole library of encyclopædic surgical information in four convenient volumes. Nothing is neglected in the domain of practical surgery, the words being construed in the most liberal sense to include surgical pathology, the question of operating, the choice of the best procedures, the details requiring attention, the complications which may arise, the preparation and subsequent care of the patient, etc., etc. Antiseptic and aseptic surgery are represented in full detail and according to the most approved methods. Due attention has likewise been paid to the medical treatment required in surgical affections. In the make-up of the book, the rich series of illustrations and the colored plates are worthy of note. This volume is devoted to Pathology, Bacteriology, Infections, Anæsthesia, Fractures

and Dislocations, Operative Surgery, all of which are treated thoroughly and in a masterly manner. The contributors are as follows; Biggs, Billings, Carmalt, Conner, Councilman, Dennis, Gerster, Nancrede, Smith, Warren, Welch, and Wood.

To say the least, this volume is of the highest order of surgical literature, of which American surgeons may well be proud, and we look forward with great pleasure to the remaining volumes of this great work, which we trust may find its way into the libraries of all those who are desirous of obtaining the best of surgical writings.

THE EYE IN GENERAL DISEASES.

By MAX KNIES, M. D., Professor Extraordinary at the University of Freiburg. Edited by Henry D. Noyes, M. D. New York, 1895: William Wood & Co., publishers.

This volume is an excellent compilation of the literature of diseases of the eye, resulting from, or systematic of, general diseases.

As a matter of course, the relations of the eye to the nervous system are so intimate that the former is often affected when the latter is in a pathological condition, consequently 245 pages out of the 455 forming the book are taken up with the eye in relation to disease of the nervous system. Then follow chapters on the diseases of the skin, digestive organs, respiratory organs, circulatory organs, urinary organs and sexual organs and their effect on the organ of vision. Infectious diseases play an important rôle in affections of the eye, and the author has devoted a little over 100 pages to this subject. The work is excellent, not only for the oculist but especially for the general practitioner, who will find in its pages, problems relating to every day practice.

ANNALS

—OF—

GYNÆCOLOGY AND PÆDIATRY.

DEPARTMENT OF PÆDIATRY.

The Diagnosis and Treatment of Tubercular Peritonitis.

CLINICAL LECTURE BY HAROLD WILLIAMS, M. D.,

Professor of Children's Diseases in the Medical School of Tufts University.

IN former years when cases of tubercular peritonitis were regarded as almost necessarily fatal, and when recovery implied a mistaken diagnosis, the early positive diagnosis of this affection was a matter of comparatively little moment. But the advances which have recently been made in the medical and surgical treatment of the disease now render its early detection of supreme importance. Treatment to be effective should be instituted before general infection has taken place, and the physician who has charge of a child with abdominal symptoms of a sub-acute or chronic nature should always be upon his guard, lest tubercular peritonitis and a subsequent general infection develop before he is aware.

In speaking upon this subject the older nomenclature is purposely chosen, though recent writers upon the subject have suggested that the disease should more appropriately be called "abdominal tuberculosis," since

it may, and probably always does originate in other organs than the peritoneum. But on the other hand it is the implication of the peritoneum which gives rise to the symptoms by which the condition becomes recognizable, and for this reason, it seems to me, that the older title is to be preferred.

Tubercular peritonitis probably generally originates from tuberculous mesenteric glands; from tubercular ulcerations of the stomach, intestines or rectum; from the swallowing of tuberculous sputum, nasal secretions from lupus, or from tuberculous food and drink. Or it may also be secondary upon other forms of tuberculosis. The milk of tuberculous cows and tuberculous meat and other food are an unquestionable cause, it now being generally admitted that the tubercle bacillus as well as its spores may pass through the stomach and into the intestine in an unchanged condition.

Taylor in the *British Medical Journal* of September 30, 1894, cites cases where three children contracted the disease from a nurse afflicted with lupus of the nose, who was accustomed to blow upon and to taste the food before it was offered to the children. But, upon the other hand, tubercular infection from food is probably rare, as is shown by the well-known demonstration of Schottelius, who fed ten families, aggregating one hundred and thirty persons in all, on tuberculous meat, which was sometimes taken raw, for two years. In eleven years none of them died of tuberculosis. The milk of cows, moreover, known to be tuberculous, does not always contain the tubercle bacillus. This is a matter of some importance, as the physician's whole duty in a case of tubercular peritonitis does not end with supplying to his patient a food which is known to be immune.

The pathological process, wherever it may begin, consists briefly in the studding of the peritoneum with tubercles, the tubercular enlargement of the mesenteric glands and the exudation of lymph and serum. If lymph preponderates, adhesions are formed, matting and agglutinating the coils of intestine and omentum together. If serum, we have the condition known as ascites. General infection follows, and the patient usually dies of tubercular meningitis or of tuberculosis of the lungs.

In a case of suspected tubercular peritonitis, the history is of great importance. Not only the family history of parents, grand-parents, uncles, aunts, brothers and sisters,

but also the history of association—the companionship of a tuberculous nurse, playmate or pet, and the immediate history of the patient himself is also of great value; the history of enlarged cervical, axillary or inguinal glands, or the history of tuberculous disease of the bones or joints. Or a history of lupus may give us some insight into the nature of a disease the early diagnosis of which is of such vital importance.

The early symptoms are not marked. We have a condition of *malaise*, loss of appetite, signs of digestive disturbance, loss of weight and strength, and hectic fever. Diarrhœa, or looseness of the bowels, with offensive brownish, watery stools, is one of the most constant of the early symptoms. There may be extreme pallor. Abdominal pain is usual, but is not a constant symptom.

Such a train of symptoms, not yielding to treatment and regulation of the diet, and recurring in a child whose parents, attendants or companions are tuberculous, or who himself has had a history of scrofulosis, or who is known to have been exposed to tubercular infection, should place us on our guard; and their persistence for any length of time would indicate a change of air, a careful regulation of the food, with an increase of albuminoids, and possibly of sugar, and a decrease of fats if these latter are ill-borne, as is usually the case in tubercular peritonitis. Rest and fresh air should be strictly enjoined, and the child should be put upon a tonic treatment, consisting of cod-liver oil, arsenic, the syrup of the iodide of iron, or of the hypophos-

phites. Guaiacol, in drop doses, is highly spoken of. Personally, I believe in the moderate use of alcohol. The cod-liver oil should be given with care, and the quantity regulated by the amount digested. It should not be given indiscriminately.

If, in spite of such treatment, the disease progresses, the appearance of the child will soon denote some serious affection. As the disease advances, constipation or diarrhœa will become more marked. The emaciation becomes more and more extreme; there is more or less abdominal pain; the waxy appearance of the complexion is more marked. The abdomen becomes distended, enlarged veins are visible on its surface, and the skin presents a shining and thinned appearance, and may become locally cedematous. Protrusion of the umbilicus is often observed. Upon palpation of the enlarged abdomen, the so-called "cakes" or hardened lumps, due to indurated masses of omentum, can often be detected. Percussion, with the patient lying on its back, shows tympanitic resonance of the abdomen, due to the distended intestine, with flatness or dullness in the flanks, denoting the presence of fluid. In changing the position of the child the presence of fluid in the abdominal cavity is demonstrated by percussion, and often corroborated by the detection of fluctuation. The spleen is generally enlarged. In boys the testicles may be tuberculous, and the enlargement of one or both of these organs is a sign of diagnostic value. Examination *per rectum* sometimes shows enlargement of the *vesiculæ seminales*, these organs,

according to Taylor, being frequently the seat of tuberculous process.

The presence of pleuritic effusion is often associated with the ascites, and in a case which I recently saw in consultation with Dr. E. W. Cushing of Boston, the pericardium was involved—a case which is interesting in this context, since an instance of recovery has recently been reported by Finlay, in which tubercular peritonitis was associated with double pleurisy.

Night sweats are generally accompanied by an extension of the process, and tuberculosis of the lungs or meninges is commonly the cause of death. The diagnosis of tubercular peritonitis can only be made certain by the history; by the elimination of other diseases; by the detection of the enlarged glands, or by the presence of an ascites which can be accounted for in no other way. But in this connection it must be borne in mind that it has been demonstrated beyond question that children and even babies have been known suffer from cirrhosis of the liver.

Emaciation with abdominal pain, or enlargement and loose offensive dejections in a tuberculous patient, should put us on our guard, and the persistence of these symptoms with the detection of enlarged mesenteric glands, or the presence of ascites should confirm the diagnosis. Chronic peritonitis of a non-tuberculous nature may of course present a similar train of symptoms, but as the treatment of the two conditions is the same, a differential diagnosis is of little importance. The treatment should be carried out upon the lines

already indicated—when enlargement of the abdomen is noted the inunction of the oleate of mercury may be tried. If the patient improves such tonic treatment may be continued, but if ascites appears or persists after such treatment has been given a fair trial, the abdomen should be opened. Paracentesis has been practiced, but the general consensus of opinion is now in favor of laparotomy. Successful cases are constantly being

reported, and according to Koenig's figures presented to the Berlin Congress, of 131 cases of tubercular peritonitis subjected to surgical treatment, 24 died, 84 were cured, and in 23 the symptoms were ameliorated. From the methods employed in the more recent successful cases, washing out the abdominal cavity with boric acid solution and dusting with iodoform is advised.

Hay Fever, Due to Nervous Influences, Occurring in Five Members of the Same Family.

MORTON PRINCE, M. D.,

Physician for Nervous Diseases, Boston City Hospital.

THE fact that hay fever may have a nervous origin is well known. A very remarkable instance of an attack of this kind has been reported by Dr. John Mackenzie of Baltimore. In this case, it may be remembered, most violent symptoms were excited by the presence of a rose in the same room. On one occasion, Dr. Mackenzie having induced an attack in this way, later showed the patient that the rose was an artificial one, and this treatment was promptly followed by a cure.

Although this origin has been recognized by some in individual instances of the disease, still, no theory, so far as I know, has been proposed to show the connection between the physical symptoms and the nervous processes, nor the pathology of the nervous processes themselves.

The cases which I am about to report furnish strong additional proof of this origin, and it seems to me to

corroborate the theory of the disease which I have on a previous occasion proposed. Of the five members of the family affected, I have only had an opportunity to personally examine two.

Of these two, one, a daughter, is a young woman about thirty years of age. She had suffered from hay fever ever since she was five years old. Since that time she has been affected every year with the exception of three, viz., 1887, '88 and '89.

These three years will be referred to again later.

The symptoms begin between May 18 and June 1, and the affection lasts until about July 5 or 6. The immediate cause of the attack is attributed to almost anything which has an irritant action upon the mucous membrane of the nose or the eyelids. The smell of tobacco smoke, dust as from dusty roads, the pollen of flowers, the glare of or direct rays

from the sun, the smell of a stable or cat, the dust from the sweeping of a room, will bring on an attack, and even the blowing of a hair across her face by the wind. Eating fruit or the mere presence of it will bring on an attack.

Flowers are considered to be an exciting cause, and in consequence all flowers are excluded from the house in hay fever time. No one flower is considered worse than another, excepting the daisy, which, by a tradition in the family, is considered to have a particularly bad influence. The patient is rather better in a boat on the sea if protected from the glare of the sun, but after landing an attack will come on almost immediately, that is in a minute.

It is particularly interesting that four other members of the family suffer from hay fever, viz., her grandmother, mother and two brothers. It is said that the grandmother's attacks always develop on August 20 and last until September 20, to a day.

She is said to wake up in the morning of the 20th with coryza, having gone to bed the night before in good health. This fact has been a matter of comment in the family, and many devices have been tried to deceive the grandmother regarding the date, but without success.

The mother's attacks are very slight now and rather irregular in their times of development. She has, however, always had the attacks in the spring when affected at all. Formerly they were very bad.

The brothers are affected all summer. One brother, the one whom I personally examined, states that his

attacks always come on on August 20 to a day. He may have a few premonitory symptoms for a few days preceding this day, but on the 20th he has a sharp accentuation of the symptoms.

The patient whose attacks I am describing remembers distinctly her first attack. She remembers that she was five years old and had been playing in the Park. She returned to the house with a cold, and her mother remarked that she "knew what that meant," and then proceeded to treat her with the same remedies which she used for her own attacks of hay fever and with those of the grandmother, that is, she put a damp handkerchief over her eyes, for there is a theory in the family that this is of service.

The origin of the influence of the fruit in bringing on an attack is interesting. She was first affected by eating fruit twelve years ago. She remembers that a physician came to the house to attend some other member of the family and saw her eating fruit while in an attack of fever. He remarked that fruit was a very bad thing for hay fever and would bring on an attack. Ever since she has been affected by fruit.

Her attacks come on in the following way. A few days before the appointed time she begins to feel apprehensive and nervous. She begins to wonder whether the attack is coming or not, watches herself, and frequently examines her eyes in the glass to see if they show congestion, and so on. Then, a few days later, while in this nervous condition, and while being exposed to one of

the ordinary causes, the attack suddenly develops in the following way:

First.—She is taken with violent sneezing, then follows photophobia, lachrymation, puffiness and stickiness of the eyelids with secretion from the conjunctival glands. Then, her throat feels sore and is seen to be red on actual inspection; her nose becomes stopped up (swelling of the turbinated tissues) and there is a copious secretion of mucus; the hearing becomes slightly impaired, probably from occlusion of the Eustachian tubes; at this stage various nervous symptoms develop. She feels what is called “tension of the nerves.” She is nervous and very irritable; she finds difficulty in comprehending what people say; her attitude towards people about her changes so that she feels that she actually hates them. Her hands shake; her knees feel weak and trembly; she feels giddy and wants support. All these symptoms develop in a few minutes and then the attack is complete.

An attack of this kind may last for several days, during which she is much depressed. It may go off as quickly as it came. Such attacks come and go during the whole period of susceptibility, during which she feels weak and “shaky” and does not sleep as well as normally. After this condition has persisted for a while, she suffers from a second series of symptoms.

First.—A hacking cough develops (in consequence of which she suffers from pain in the chest from coughing).

Second.—Asthmatic attacks come on at night. These may wake her

up out of a sound sleep. In an attack she is obliged to sit up in bed, resting her head on her knees, and struggles for breath. The description of the attack is that of typical asthma, and wheezy inspiration follows during the daytime. She does not have many of such attacks, but last summer, for example, she had three and wheezed a good deal during the day. The second kind of attack differs from the first, in that the primary symptom of sneezing may be omitted. She is more apt to wake up with this kind, while the first is due to some kind of irritation.

Regarding her former treatment, this patient seems to have tried all the classical remedies, including sprays and the actual cautery, without any relief.

The patient herself was convinced that her attacks were in some way due to a mental or nervous influence, and this seems to have been the opinion of one of her former medical advisers, so in 1887 she was treated by the mind cure, with the result that she was free from her symptoms for three years; namely, the years above referred to. On the fourth year they returned slightly. The original mind curist, who had first treated her being dead, she was obliged to apply to another, but this time with no effect. In the fifth year she was as bad as ever, and has continued so ever since. A Christian Scientist was also tried, but without effect.

A careful study of the symptoms and history of this case convinced me that it undoubtedly had a nervous pathology, and in some way was due to the influence of the mind upon the

lower nervous processes. The theory which I adopted was the following: The symptoms represented an association neurosis, that is to say, by constant repetition, year after year from early childhood, the symptoms had become so associated or bound together in a group that they formed a neurosis or sort of nervous mechanism which only required an excitation to set them off, as you might press a button to set working a piece of mechanical mechanism.

But, it may be asked, if this were the whole of the cause, why should not such an external irritation as the smell of flowers bring on an attack in other seasons of the year? The answer to this is, that a second agent is required and this is found in auto-suggestion.

It will be remembered that at about the time an attack is expected the patient becomes apprehensive, anxious and worried about herself, in fact is in a condition of expectancy. As everyone who is familiar with the influence of suggestion on the mind knows, this is equivalent to direct auto-suggestion. It is the same in effect as if the patient said deliberately to herself: "About May 18 I shall have an attack of hay fever when exposed to the usual causes."

Under the influence of this auto-suggestion, when the time comes, any of the accustomed irritants bring on an attack. At any rate, this view was thoroughly explained to the patient, who recognized the truth of it, and it was agreed that it should be taken advantage of for purposes of treatment. If auto-suggestion caused the patient to

become irritable to external influences, a counter suggestion could easily prevent its result. A suggestion, therefore, was written on a paper and given to the patient to familiarize herself with, and to think of night and day in her leisure moments. The idea was to make this counter suggestion a sort of fixed idea which would counteract her own auto-suggestion.

On the second visit the patient was also slightly hypnotized, that is, made slightly drowsy, in which state a person becomes more susceptible to suggestions, and the written suggestion was repeated to her. The written suggestion was to the effect that her symptoms were the result of habit on the one hand, and were excited by auto-suggestion on the other, in the form of apprehension. As she knew the nature of her trouble she would cease to apprehend the return of the symptoms, and this association would be broken, and she would no longer suffer from hay fever.

The result of this treatment was that the premonitory symptoms, from which the patient suffered at the time of the first visit, entirely disappeared. She has surrounded herself with flowers, walked through hay-fields and subjected herself to the ordinary exciting causes of hay fever, without any return of her symptoms. She considers herself perfectly well and feels confident of her cure.

The brother, above referred to, also suffers from typical hay fever, and similar treatment was made use of in his case. As his attacks do not develop until August it is not possi-

ble as yet to tell the result. One of the causes in his case is the presence (smell?) of a cat, and, curiously enough, this cause will affect him at any time during the year. He is now hunting for a cat, but until he subjects himself to it, one cannot foretell the result.

Regarding the other members of the family I cannot say whether the hay fever is due to the same neurotic influences in their cases as in the two cases just narrated. From what is told me of the grandmother it seems most probable that this is the case, otherwise it would seem difficult of explanation how the relative position of the moon to the earth could have an influence in producing hay fever in an old lady, as, by ordinary processes of logic, would have to be the case if we assume an external cause for the regular development of the affection on the 20th of August.

The fact that five members of the same family are affected with the same disease is also an interesting fact, and has a bearing upon the neurotic origin. It would seem that mimicry must play an important part

in originating the auto-suggestion in each of these cases.

In view of these facts, one naturally asks oneself the question, What proportion of all cases of hay fever have this origin? May not a very large number — one cannot generalize too extensively and say *all*, — of the cases of recurrent periodic hay fever develop in the same way? May not the attacks come on on a certain date because of apprehension or expectancy, by which the patient suggests to himself or herself that at that time he or she will be susceptible to external irritants of one kind or another, and then at the suggested time the irritant produces its habitual and expected effect?

This seems to me a plausible hypothesis, and the experiment well worth trying, of treating a large number of such hay fever patients by counter suggestion and recording the results. May it not be that the reason why certain places, such as Dublin, are reputed to have a specific influence against attacks, is the counter suggestion thereby given that the patient will be free from attacks at such places?

NOTES.

Professor Jacobs, of Brussels, will visit Boston in June and will operate at the Free Hospital for Women.

Dr. E. W. Cushing will sail for

France on July 6, to observe the new methods of vaginal hysterectomy in vogue there. He will return in the latter part of August.

IMPORTANT NOTICE!

The Congress of Gynæcology, Obstetrics and Pædiatrics will commence at Bordeaux on **August 8, 1895**, instead of the 12th of the month, as was announced.

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ORIGINAL COMMUNICATIONS.

Some Mooted Points in Pelvic Surgery.*

(AN ABSTRACT.)

FRANKLIN H. MARTIN, M. D.,

Chairman, Section of Diseases of Women and Obstetrics, American Medical Association, 1895; President Chicago Gynæcological Society and Professor Gynæcology in Post-Graduate School of Chicago.

TREATMENT OF FIBROIDS OF THE UTERUS.

THE surgical treatment of fibroids of the uterus is always a fruitful subject for discussion in gatherings like this. The fact that the subject is such a fertile one for debate; the fact that it is a debatable question, is the best proof that no one method has yet arisen which meets all indications, and that the question should be discussed right on until our debates show a lamentable lack of interest as a result of general agreement.

“Do you employ electricity in the treatment of fibroids of the uterus as much as you did formerly?” is a question which I have frequently to

answer. To answer this question in the affirmative would be to admit that I ignored the recent great progress in abdominal hysterectomies and other pelvic surgery, and also to admit that electro-therapeutics had not progressed. While I employ electricity successfully in a large number of fibroids, I do not employ it in the same large proportion of cases that I did formerly.

The cases upon which I do the most satisfactory work with electricity now, are those which surgeons who have a wholesome regard for their statistics refer to me to get rid of, or similar cases which come directly to me. They are usually large hæmorrhagic tumors, the subject ænemic, heart hypertrophied, kidneys dis-

*Delivered at Baltimore, May 7, 1895.

eased, skin waxy, respiration difficult. Filled with pelvic pain, pelvic pressure, and pains of peritoneal adhesions. Uterus deep and irregular, menorrhagia, when not bleeding discharging semi-purulent fluid. Digestion ruined, secretions checked, bowels constipated, and reflexes run rampant. In other words, among the most deplorable cases that it becomes a surgeon's lot to behold.

These cases I treat with galvanism in strong doses, systematically and rationally applied, combined with the most appropriate general tonics and alteratives. I apply the galvanism with the idea of getting the following well-known effects of the current: First, most powerful general tonic; second, powerful local antiseptic; third, anti-hæmorrhagic effect of positive pole; fourth, local trophic stimulant.

I have not time to tell how much these apparently desperate cases invariably improve under this treatment; how I have resuscitated case after case, so that they have been able to have their burdens removed by skillful surgery and again live; how I have been able with treatment from time to time to keep symptomatically well a score of patients who under no circumstances would have an operation of the safest nature, and who before electricity came to their aid were bedridden.

Another class of cases in which galvanism is a justifiable means of treatment is that of the hæmorrhagic variety not of large size, the subjects of which are near the menopause.

The hæmorrhage can often be controlled, and the atrophy of the uterus, which is a usual coincident of the established menopause, will do the rest. I have saved many of such cases the horrors of an operation, while at the same time keeping them in symptomatic health, during this precarious time of their life.

However, in the present state of pelvic and abdominal surgery, I would not voluntarily administer or recommend galvanism for fibroid tumors, the subjects of which were under forty years of age, whose tumors were suitable for operative procedures, and whose general health would show an average chance for favorable surgery. While I would expect to be able to control the hæmorrhages in the majority of such cases, improve their general health, and to reduce the size of the tumor, relieve the endometritis, and stimulate absorption of peritoneal adhesions, I would not expect these results to be permanent in a large enough proportion of cases to justify keeping the patient away from the more permanent and satisfactory results of modern surgery.

I cannot admit that galvanism ever does harm in these cases, except that it may be the means of keeping patients away from more effective surgery. It almost invariably accomplishes good, even if applied but a short time. Galvanism, except in fatal doses, the opinions of certain surgeons to the contrary notwithstanding, never produces peritoneal adhesions. It is one of the most powerful antiseptics we have, and the

only one we can send through deep tissues without traumatism.

Needles, probes and other forms of electrodes improperly employed may carry septic material where they should not; electricity never does. Electricity, irrationally and erroneously employed in cases of pelvic accumulation of pus, may by producing powerful muscular contractions, empty a pus sack into the peritoneal cavity. This would be but the abuse of a powerful remedy instead of legitimate use.

Thus, as gynecologists, the better we understand our armamentarium the more will we value galvanism. The gynecologist who ignores this remedy, given to us by an exact science, will have reason to bark hard at its aggressions, and by his bark can we appreciate his hurt, and at the same time estimate his loss.

REMOVAL OF APPENDAGES FOR FIBROIDS.

This operation, popularized by Tait and his followers as a remedy for fibroids of the uterus, has in my opinion about run its course. While, since its discovery, it has served to relieve and cure many women suffering from fibroids, like all the minor surgical methods for that difficulty, it has that fatal element of uncertainty, which in the light of the comparatively safe and certain hysterectomy, makes it less popular as a remedy than it was before the appearance of this more successful rival.

The curative effect of the operation

for the removal of the appendages is based upon its producing an artificial menopause—their checking the hæmorrhage of hæmorrhagic fibroids; second, the cutting off from the uterus nourishment supplied by the ovarian arteries, thus reducing the tumor by direct curtailing of the normal blood supply of the uterus; and, third, any definite influence which such an operation may exert on the trophic nerves of the uterus, thus giving that organ and its ungainly parasite the benefit of any uncertain results which may occur from such a disturbance.

Theoretically this is all a little vague. Practically it controls the menorrhagia of fibroids in about ninety-two per cent. of the cases upon which the operation is performed. Almost invariably where the menorrhagia is not checked the tumor continues to enlarge, and in a small percentage of cases it continues to grow, even where an artificial menopause is established. In a small percentage of cases only does the tumor entirely disappear, even when a symptomatic cure is enjoyed. Therefore the tumor remains indefinitely a constant source of anxiety, if not of possible future harm.

This operation then, which made an epoch not only in the treatment of fibroids, but in surgery, must be relegated to the rear, by the very forces of surgical advance which it did so much to create. Its rival is hysterectomy; and so successfully is hysterectomy standing the test that no one can scarcely find justification

for the operation of removal of the appendages.

When a laparotomy is decided upon at all for these cases, it is difficult to give one good reason why a clean sweep should not be made and a hysterectomy accomplished. When a tumor is large and the broad ligaments consequently spread, a thorough removal of the appendages is more difficult than a hysterectomy. When the tumor is small the patient is ordinarily in prime condition, and while a hysterectomy is a little more difficult than the appendage operation, no one can be justified in leaving behind a useless, diseased uterus, in in order to save a few minutes time in an operation. If the appendages are diseased as the result of infection, they should be carefully enucleated, and no matter how long it may consume (unless the life of the patient is positively to be endangered because of increased time required for a hysterectomy) the latter operation is imperatively demanded because of the certainty of infection of the uterus. This leaves the operation of removal of the appendages one which should be reserved as a make-shift, when for some good reason, after the abdomen has been opened, the operator finds he has underestimated his patient's strength to tolerate a hysterectomy. Dr. Byron Robinson of Chicago, who finds it difficult to shake off entirely the teaching of the Birmingham sage, still opens the abdomen with the deliberate intention of removing the appendages for fibroids, but supplements that operation by tying the

broad ligament, including the uterine artery, as it ascends along the side of the uterus. By thus applying my operation from above, he hopes, and with reason, I think, to reduce the 8 per cent. of bleeders which follow the old Tait operation. This procedure increases the time of the Tait operation, and still leaves the uterus. It is one step in advance, but still a make-shift, and one more halting place at which the beginner and the timid man may in times of discouragement close up and save his self-respect.

VAGINAL LIGATION OF THE BROAD LIGAMENT.

This operation, which was devised by me for the treatment of fibroids, is one which does not require a laparotomy. It is a minor operation in every sense of the word, except in its execution. It consists, as many of you know, in ligating from the vagina more or less of the base of the broad ligament of either side of a fibroid uteri. The vagina is first incised at its vault to the right and left of the cervix, at right angles to the base of the broad ligaments. The contents of the broad ligaments are separated from the bladder in front and from the peritoneum behind. it is then ligated *en masse* with either a single or a double ligature of silk, kangaroo tendon or chromacized catgut, sufficiently deep and comprehensive to include the main channel of the uterine artery and any anomalous branches of that artery, and also all the nerve supply which finds its way

to the uterus by this route. In exceptional cases the ligatures may be carried sufficiently high on one side so as to include the ovarian artery. The ligatures are cut short and buried by closing the vaginal mucous membrane by a running stitch of fine cat-gut.

The objects of this operation are: to check uterine hæmorrhage; to cause atrophy of the uterine tumor by depriving it of blood nourishment; to influence a decrease of the tumor by interfering with its nerve supply.

Here we have a real minor operative procedure for the treatment of uterine fibroids. It has arrived on the scene of action at the wrong time to make itself very welcome. Instead of giving us a certainty, it gives one more possible relief, one more hesitating point. Its claims are so rational, however, and it has the so important advantage of being but a minor operation, that it will undoubtedly become a method of treatment of annoying prominence to the uncompromising radical of the future.

This operation may be performed with advantage in all incipient fibroids in which the operation of hysterectomy will not be accepted by the patient, and a minor operation will be accepted. It may be performed in all hæmorrhagic cases, when the patient has been so reduced by hæmorrhage that it is considered unsafe to submit her to a hysterectomy. It may be performed in cases of advanced kidney and heart difficulties in rapidly growing or hæmorrhagic fibroids, where a prolonged operation

would not be advisable. It may be employed in any case as a direct and permanent curative means, with the understanding that the operation is still on trial, and that the remote results may not be of such a gratifying nature as has been the case with the immediate results in the majority of cases already reported. From a rational standpoint as a treatment for fibroids, it should replace the operation of removal of the appendages entirely. It should not, however, from our present light on the subject, ever be substituted for the certain hysterectomy, when in the opinion of an expert laparotomist the latter is reasonably sure of success.

The operation is not applicable to enormous interstitial fibroids (which draw the cervix high into the pelvis), in suppurating fibroids, or in fibroids complicated with diseased appendages.

TREATMENT OF STUMP IN ABDOMINAL HYSTERECTOMIES.

A subject is this, the discussion of which has been long and is not yet ended, a subject, however, which has been discussed with far more amiability than was formerly that other one, of how we shall treat the pedicle in ovariectomy. The question of whether the ovariectomy pedicle shall be intra or extra-peritoneally treated is no longer a mooted point in surgery. Two or three short years ago the question of treatment of hysterectomy pedicles seemed to be as definitely fixed on this one point, as does the ovariectomy pedicle seem to be

today. At that time surgery demanded that the pedicle of a tumor, the tissue of which was uterine structure, should have an extra-peritoneal fixation. To be sure, we were never quite satisfied with that not altogether inelegant and incongruous disposition of the hysterectomy stump. The points of distress were its immovability, its displacement and its exposure. It seemed, however, inevitable that we should submit to these objections in order to obtain hæmmostasis. Baer, however, in his simple device of ligating the uterine arteries before they reach the uterus has rendered the hysterectomy stump bloodless, so that it can now be dropped as safely, and as free from unnatural fixation, displacement and exposure, as can the ovariectomy pedicle; or it can with perfect impunity be removed entirely. And with this decided advance, hysterectomy has reached the point where its sequels are as little dreaded as the operation itself, and the operation is as safe as is ovariectomy.

I believe that extra-peritoneal fixation of the pedicle in hysterectomies as a routine practice is no longer justifiable. That extra-peritoneal fixation may in rare cases be a justifiable procedure I will grant. I have already mentioned what I considered the objections are to extra-peritoneal methods, viz., immovability of the pedicle, displacement of the pedicle, and exposure of the pedicle to external infection. Byford's vaginal fixation overcomes the first two objections as well as any method of

external fixation. But the inventor of that method, after making a brilliant record with it, has discontinued it as a routine in favor of the intra-abdominal.

Senn's new cuff method which, while it keeps the substance of the pedicle in the pelvis, fixes it, though distantly, through the intervention of the cuff to the lower angle of the peritoneal wound, and exposes it through this tube of peritoneal tissue to possible surface or external infection. I am sure, notwithstanding its brilliant parentage, that it can never be generally adopted as a routine practice, that it will appear in history as one of the curious methods, the outcome of the evolution strain for a perfect hysterectomy.

There are yet a few operators whom we have learned to respect profoundly, who still hold to the fixation of the pedicle in the lower end of the abdominal incision, who still employ elastic ligatures, serra-nœud, and the accompanying paraphernalia as a routine method of practice. With the results of such men's practice we cannot find fault. Some of them are masters, and, therefore, their results would be of the best, no matter what method they adopted. The question of the relative practicability and permanent effectiveness of any operation must be tested by the results obtained in the hands of the average surgeon. It is not enough that some immortal can make a brilliant record with his abdominal fixation. That he can accurately adopt and manufacture a pedicle the length

necessary to obviate undue tuition, displacement or bladder squeezing; that he can so treat his constricted stump that it will never become infected; that he can therefore prevent in every case extension of suppuration to broad ligament sutures, and thus obviate interminable fistulous tracks; that he can prevent in every case an ugly depressed abdominal scar — all of this is not enough. It is necessary that the operation of the future shall be one in which there is the minimum disturbance of normal relations between the organs of the pelvis and the remaining pedicle, in which there is the minimum loss of normal mobility in the remaining organs, in which the risk of secondary hæmorrhage from pedicle or broad ligament is reduced to a minimum, in which the pedicle when once disposed of is out of reach of external infection as far as it is possible to get it, an operation which is practically finished when the abdominal incision is closed (instead of one which submits the patient and the physicians to an operative procedure which must last under the most favorable circumstances from ten to twenty days before the patient is finally severed from her tumor and detached from the mechanism of the surgeon), finally the routine operation of the future must be one of minimum simplicity, easy of execution, and one which can be accomplished in the shortest time consistent with the above requisites.

Such an operation I believe we have within our reach in employing the Baer method of ligating the blood

supply of the cervix and lower portion of the uterus before it enters the tissue of that organ; in other words, ligation of the uterine artery and branches. After this simple procedure has been enacted, it matters little whether the stump is removed entirely, left buried, or projecting into the abdominal cavity.

KIDNEYS.

The failure to recognize obscure kidney diseases in patients before submitting them to a severe operation has been the cause of many unavoidable deaths. We should not only recognize kidney difficulties in every case, but we should also know when a case is laboring under some form of kidney trouble, if that stage has been reached beyond which it is safe to proceed.

It is not enough that the urine in any given case is approximately of normal quantity; of approximate normal specific gravity; and that it gives negative results in tests for albumen and sugar. It is necessary to learn the history of the case, to estimate the specific gravity in a twenty-four hour specimen, to ascertain the amount of urea for twenty-four hours, and to supplement this with a microscopical examination, thorough and complete. In diabetes we should not operate. In interstitial nephritis, when the disease is not far advanced, an operation may be risked with proper preparatory treatment. These latter cases are the very ones which, from their great difficulty of diagnosis, are often neglected, and consequently disaster results.

The importance of this subject must be my excuse for entering into primary details. The following summarizes the signs of chronic interstitial nephritis: Lowered specific gravity of urine; patient arising at night to void urine (when there are no bladder or urethral diseases to give rise to such a procedure); an enlarged heart with accentuated second sound, a tense pulse, and diminished urea. Albumen is frequently absent. The diagnosis is doubly sure when hyaline casts are formed.

I scrutinize all my patients in all these points. If the foregoing state of affairs exists to a marked degree, I refuse to operate. If, however, with the above symptoms I find a normal quantity of urine, which does not show a reduced specific gravity under 1010 to 1014, and where the amount of urea does not sink lower than six or seven grains to the ounce, and the patient is well preserved generally, without advanced heart disease, I am confident that I can operate on them with safety, if I can secure proper preparation.

I prepare these patients by first placing them on an exclusive farinaceous diet, with milk and fruit, an indefinite number of days before the operation. A week or ten days before the operation she is put on a diuretic, with instructions to drink large quantities of water. The object is to increase the daily quantity of urine to from 60 to 100 ounces, in order to thoroughly flush the kidneys and rid the patient of dangerous accumulations. With 80 to 100 ounces of

urine flowing for several days, with the patient living on a non-nitrogenous diet for several days, with the urea in improved proportions considering the diet, I feel safe to risk an operation.

Dr. Charles W. Purdy, who has had an enormous experience in watching the behavior of kidney diseases under operations, says, in reference to chronic parenchymatous nephritis, "I see no reason why these cases, if unaccompanied with dropsy, may not be operated upon if carefully selected."

ABDOMINAL DRAINAGE.

There are now but faint and unimportant protests against the use of drainage in abdominal surgery, when certain definite conditions exist. These protests are so few and so unimportant that the question whether we should ever drain can no longer be considered mooted. The question how and when we shall drain are points upon which there is still some discussion.

Drainage in abdominal surgery has definite indications to meet; first, the removal of blood, the consequence of venous hæmorrhage from points which have been the seat of adhesions; second, the removal of fluids from ruptured cysts or from sponges, when the toilet of the operation has entirely failed to do so; third, the removal of septic matter from the abdominal cavity.

The removal of blood from an abdominal cavity where there are numerous oozing surfaces is necessary, because it is the safest and quickest method of stopping the hæmorrhage.

We all know that many women have bled to death into their own bellies after operations where extensive adhesions have been separated, who would have been saved if some form of drainage had been adopted which would have removed the fluid before it could accumulate. Constant removal of the blood leaves the bleeding surface dry and coagulations form at the vessel's mouths. If the blood is allowed to remain, the coagulum is dissolved in the accumulated fluid and the hæmorrhage continues.

It is necessary to have a drain which will remove all the fluids, blood and otherwise, from the abdominal cavity for two other reasons. First, because this fluid produces peritoneal irritations, even though it does not become septic. The patient will exhibit this by a rapid and weak pulse for several days, while the weak and partially paralyzed peritoneum is accomplishing the removal of the fluids by absorption. Second, this accumulated fluid is the richest culture medium in the world surrounded by one of the most perfect incubators, and is therefore liable to develop any pathogenic material which may have in any manner come in contact with it.

Thus one who does not employ drainage at all in abdominal surgery must select carefully his cases, so carefully indeed that he would discard about all which most required his assistance, or he must expect an unnecessary mortality. If he enucleates tumors, he must have large extensive oozing surfaces. If he at-

tempts to check every particle of that oozing by ligation, cauterizing or other means, before closing the abdomen, he will be obliged to expose every portion of it not only, but he must carefully and successfully manipulate every portion of these surfaces whenever located in the abdomen. As these surfaces are frequently intestinal, these delicate and resentful organs, too, must come in for their share of manipulation. Much time (time of inestimable value) has been wasted. One can never be certain that all bleeding points have been secured; the delicate intestines have received unnecessary manipulations which weaken their tenacity, and finally the abdomen must be closed with no absolute monitor on guard and no means of relief but second laparotomy, if intuition should indicate accumulating blood. So, too, the same arguments apply to spilling of pus in the abdominal cavity, contents of cysts or *débris* from any source. Excessive exposure of peritoneal surfaces, excessive manipulation, excessive sponging, excessive washing, only will accomplish its removal, and we can be quite sure that the peritoneum will consent or be able to take care of that which may occasionally be overlooked.

In my opinion one should drain always where there has been separations of adhesions, the oozing from which is sufficient to accumulate in any perceptible quantity in the dependant portions of the peritoneal cavity by the time one is ready to close the abdominal incision, as indi-

cated by exhausting a glass drainage tube which has been placed in the cavity for that purpose. One should drain also when, accidentally or otherwise, contents of cysts have leaked or spilled into the abdominal cavity when there is any doubt of its complete removal. Finally, in my opinion, one should always drain after any operation has been performed which calls for extensive flushing of the abdomen.

On the other hand, I do not consider it necessary to drain if a perfectly dry condition of the peritoneal cavity is obtained (and there is no source from which fluids can accumulate), even if there has been during the operation a removal of septic material. In other words, I have great faith in the resisting or antiseptic power of the peritoneum, so long as it is in its normal state of dryness. It is only when the peritoneum, in addition to its normal work, is put to the strain of caring for little puddles of culture media which a careless operator has neglected to provide means of removing from its folds, that I am afraid of peritoneal failure, septic development and disaster.

I believe that the glass drainage with the suction pump is the safest and most effectual drain, and a form which is almost invariably applicable. It accomplishes promptly, and definitely, the removal of all fluids from the peritoneum as frequently as it may seem necessary, and in a manner so that their amount may be accurately estimated. While the gauge drain

may be used with advantage in other cavities, I must protest against it as a routine drain for the peritoneal cavity. For bleeding surfaces following enucleation, except in extraordinary cases (such as I have seen but few times), it cannot compare with the glass drainage and pump. When it is employed I cannot but feel that it acts more as a tampon or a dam than as a drain. With it there is no way of knowing accurately how much work it is accomplishing, or how much it is failing to accomplish, or how necessary its employment may have been.

The glass drain properly cared for never does harm, even if its use in any given case is afterwards found to have been unnecessary. Fistulae rarely follow its use, and, when they occasionally do, it is in desperate cases where an operation without it would have been impossible.

INTRA-ABDOMINAL SUTURES.

Silk is an ideal suture for intra-abdominal work, if it is properly sterilized before using, and if it never becomes infected after it has been placed. The fact that silk if once infected wherever buried will never cease giving trouble until it has been removed either by surgery or by the very suppurating processes which it maintains, makes it a questionable ligature under any circumstances in abdominal surgery. One may be quite positive that his aseptic sutures are buried in aseptic tissue. He can never be positive that some septic process may not reach those ligatures, dur-

ing convalescence, or long months or years after convalescence, a septic process which finds exit somewhere in a long fistulous canal and which would heal spontaneously after discharge if it were not for a non-absorbable septic foreign substance at its bottom. The same argument holds good in regard to any form of non-absorbable suture material as a buried suture.

If on the other hand an antiseptic absorbable ligature is buried in aseptic tissues (whose life is of sufficient length to effectually accomplish its mission), it appears promptly and is soon out of the way of septic processes, which by accident may reach its vicinity; or if it should become septic before absorption is completed the completion of the absorption will eradicate what would otherwise become a fixed nidus of infection, and the normal reparative processes of the tissues would be left unhampered.

Catgut and kangaroo tendon are the two forms of absorbable sutures which have been most employed. Kangaroo tendon is scarce, difficult to prepare, and consequently expensive. I have not employed it, and therefore cannot practically discuss it. Catgut until quite recently has been looked upon with suspicion. Even when with

great care it has been successfully sterilized, so that no cultures resulted in its test, it still formed a nidus for suppuration in otherwise practically aseptic tissues, because it was discovered of its later possessing qualities of a superlative culture medium. Then it was necessary to render it not only aseptic but to saturate its substance with a harmless antiseptic which would not affect the integrity of the suture or poison the tissues of the patient. In seeking such an antiseptic it was also desirable that the antiseptic or the process of preparing the drug would increase the life of the suture. Experiments and practice have been able to demonstrate that catgut, sterilized by heat and afterwards treated by either chromic acid or methel blue, will remain antiseptic and also possess life of sufficient length for most ordinary intra-abdominal work.

If those two forms of sutures on continuous trial carry out the promise that they have already given, we will possess an economical antiseptic absorbable ligature for buried and intra-abdominal work, which will with great certainty do away with one of our most annoying sequela in that line of work.

Two Cases of Disease of the Fallopian Tubes with Complications and Notes on Diagnosis.*

ALBERT H. TUTTLE, S. B., M. D.,

CAMBRIDGE, MASS.

I AM induced to report the following cases on account of interesting features in the diagnosis of both, and the rarity of hydrops tubæ, especially from the cause present in this case.

CASE I. — Hydrops tubæ on right side, ovarian tumor on the left. Miss J. M. D., aged twenty-nine years. Previous health until three years ago excellent. She then had an attack of pelvic inflammation, cause unknown, and since has had a history of irregular menstruation. In the spring of 1893 she had another attack of pelvic inflammation; and a third beginning the thirtieth day of August of this year. From the last attack she never completely recovered, for although able to be up and about, pelvic pain never entirely left her. Three days before entering the hospital she was obliged to again take her bed, and it was determined that operative measures were necessary for her restoration to health.

The family history shows one sister, a five-para, with evidences of a tumor in the pelvis; a brother has had a foreign growth of some kind removed; three other sisters, all older than the patient, are apparently quite free from disease. The history of the older generations could not be ascertained.

In February, 1894, the patient was cured by Dr. Strittmatter, of Philadelphia, for the relief of the metrorrhagia, then a prominent symptom of her complaint.

During her last sickness she was under the care of Dr. Osman of Dorchester, who suspected the character of her disease, and insisted upon an examination under ether; the vagina had been so irritable that it was impossible to make a satisfactory examination without anæsthesia. At the time of her entrance to the hospital she had no fever or other symptom of acute inflammation.

The examination showed a mass in the pelvis to the right, lying high, apparently separated from the uterus, and extending upwards three finger-breadths above the pubes. In Douglas' pouch, reaching further to the patient's left, was a smooth, rounded mass, obviously of a cystic nature, as large as a goose-egg, seemingly unconnected with the mass on the right. Neither ovary could be determined. The uterine cervix was somewhat enlarged, but with a clean os. The fundus of the uterus was in an anterior position.

Upon opening the abdomen the nature of the disease was readily and accurately decided. The uterus was slightly enlarged and presented three

* Read before the Gynecological Society of Boston, March 16, 1895.



FIG. II.



FIG. I.



FIG. IV.



FIG. V.

DR. TUTTLE'S CASES OF DISEASED TUBES. See pages 655 and 657.

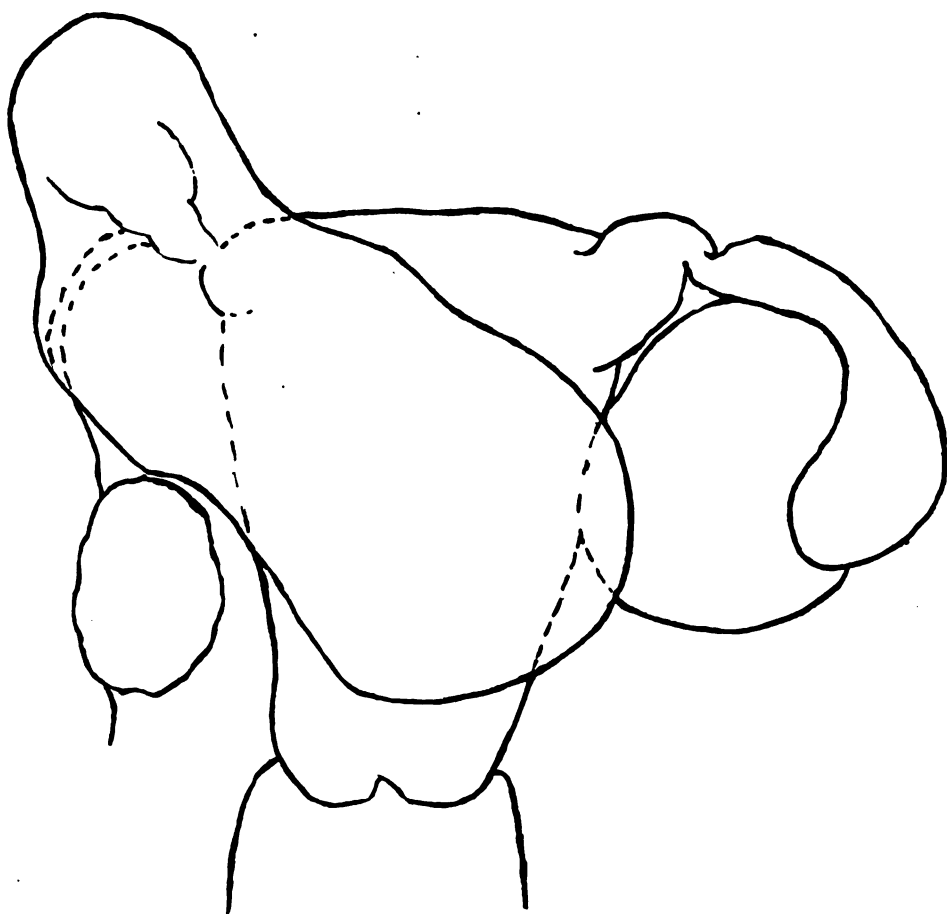


FIG. III.

small fibroids: One, sub-peritoneal, about pea-sized, near the centre of its anterior surface; the second, more interstitial, situated somewhat anteriorly at the left cornu, the largest present, and about the size of a walnut; the third of hazlenut-size, that lay at the origin of the right Fallopian tube, markedly interstitial, but circumscribed, which pressed upon the lumen of the tube so as to obstruct the outflow of secretions and interfere with the tubal circulation.

At its origin, the right tube (Fig. 1) was smaller than usual, and from this point it ascended upward, outward and backward, making three slight convolutions, and rapidly growing larger in diameter, until it reached two finger-breadths above the uterus, when it turned and descended backward, inward and downward, reaching into Douglas' pouch as low as the internal os. In its descending portion the enlargement of the tube was not uniform, but characterized by three distinct swellings, the diameters of which increased from above downwards, until the lower, at the fibrinated extremity, reached the measurement of two and one quarter inches.

The upper portion of the tumor presented in the abdominal incision in a position anterior to the normal plane of the uterus, and resembled in appearance a coil of dilated gut. The lower portion of the tube reached far over to the patient's left, and from its position and shape gave one the impression, at the earlier examination, that its origin was from the left side.

The left ovary (Fig. 2) was con-

verted into a cystic tumor, about the size of a hen's egg, and with the enlarged Fallopian tube was firmly embedded in a great mass of adhesions; the whole situated above the greatly distended extremity of the right tube, which obscured it during a digital examination per vaginam.

The specimens removed are illustrated in the accompanying cuts, which were drawn from nature soon after removal. The outline sketch (Fig. 3), with the uterus, is diagrammatic, and shows the relation of the tumors to the uterus.

The removal of the tube and ovary of the right side was not attended with any particular difficulty, but the left ovary was firmly imbedded in adhesions, and had to be cut out in great part, as it was impossible to wholly tear it away.

Uninterrupted recovery followed. During the attacks of pelvic inflammation the pain had always been more severe on the left side, although there was usually considerable on the right before the attack ceased. This was in harmony with the pathological conditions.

It is my opinion that in this case the fibroid condition of the uterus was the primary cause of the hydrops tubæ, which is one of the rarer causes attributed to this disease.

CASE II. — Double pus tubes, abscess of right ovary, abscess of omentum, intestinal adhesions.

Mrs. W. J. C., aged twenty-seven years, married eight years, one para; no miscarriage. Previous health good until the birth of her child, seven years ago, when she experienced a stellate fracture of the cervix and a

slight laceration of the perineum, followed by symptoms of endometritis and subinvolution, that have continued to date. There has been periodical and more or less constant headache, metrorrhagia subsequent to every moderate physical effort, with regular flow every four weeks. She has used on an average between twelve and fifteen napkins a month, but at times has required from twenty to thirty.

When first called to see the case I found her suffering with pain over the abdomen, loss of appetite, insomnia, constipation, high fever, rapid pulse, and great emaciation, digital examination revealing a fluctuating mass in Douglas' pouch, extending into the ovarian regions on the right and left, and reaching to a level with the fundus of the uterus. The ovaries could not be distinguished as such, and the uterus was crowded well forward under the pubes, in such a manner as to make the fundus much more readily palpated than normally. She had had several well defined chills which, considered with the high temperature and fluctuating mass, had led to the diagnosis of pelvic abscess before I was called by her attending physician, and the only point for further consideration was whether the disease was intra-tubal, intra-ovarian, intra-ligamentous, or extra-peritoneal, for I did not then even think of the complication of omental abscess, certainly a rare form if one can judge from the small amount of literature on the subject.

The rarity of the purely extra and intra-ligamentous forms biased me

strongly to favor the remaining varieties, and an excessive purulent uterine discharge (the nurse said it was impossible for her to keep the vagina clean, as within an hour after douching the parts there would be as much discharge present as though it had never been cleansed, and careful examination showed that it came from the uterus), coupled with the emaciation and other symptoms of suppuration of long standing, led to the diagnosis of pus tube. I did not recognize the existence of an abscess of the ovary and omentum until the abdomen was opened; in fact, knowing that a pus sac was present, I was very particular that it should not be ruptured by rough manipulation during the examination, a thing which I have known to occur with a rapidly fatal result.

Believing the only rational treatment of a pus tube is its complete removal, I opened the abdomen under strict aseptic precautions. The infiltrated and distended omentum presented and was found adherent with a coil of small intestines to the left tube; it was carefully separated with the bowels, and by this means an abscess cavity in its centre, which communicated with the tube, was discovered. The gut and omentum were parted, the bleeding points in the adhesions secured, the infiltrated suppurating mass drawn from the abdominal cavity, a line of shoemakers stitchers passed through the base and tied sufficiently tight to prevent bleeding, the mass cut away, and the raw surfaces covered in by folding together and stitching.

The left tube and ovary were then

freed from the inflammatory bands, drawn up and sewed off similarly to the omentum, and removed. So far there had been no pus spilled into the abdominal cavity, but in the attempt to remove the right tube and ovary a rupture of the sac occurred, and some of its purulent contents escaped in spite of strenuous efforts to catch it all upon a sponge. The pus was not fetid. The raw surfaces left by cutting away the tube and ovary, as it lies in the pelvis without tension, is somewhat of a V-shape, a more or less triangular shaped piece having been removed from the broad ligament, and if this gap is not closed the fundus of the uterus will be robbed of much of its support, and may later assume a retroverted position, which subsequently may be attended with an extreme condition of prolapse. By sewing the sides of the V together, not only is the raw surface covered in and intestinal adhesions later averted, but the broad ligament is repaired, made somewhat more tense than before, and the uterus held up in its normal position and in a most natural manner.

I have adopted this method for some time with considerable satisfaction, and so finished the operation in the present case. The abdomen was drained with a rubber tube for four days.

A sharp reaction followed the operation, which subsided in two days, and a slight secondary fever followed the withdrawal of the drainage tube. The upper part of the wound, which was closed with tendon, healed by primary union, and the lower part, where the tube was inserted, by granulation in four weeks.

The accompanying illustrations were taken from nature immediately after the removal of the organs, the right tube with abscess of the ovary (Fig. 5) being somewhat smaller than before their removal, owing to the loss of part of their contents after rupture.

Looking backward upon the above cases it becomes interesting to study the comparative diagnosis. Both are of long standing, — a fact developed from the previous history, — but the first shows no impairment of nutrition, no loss of tone or strength, simply disablement, with at times attacks of pain due to peritonitis, circumscribed, and of comparatively non-virulent infective character. The other has been less disabled, pain more constant but less acute, nutrition greatly impaired, with gradual wasting of the body, and the superimposed acute attack, which finally led to the operation, of a severe type and attended with great prostration. She had eaten nothing to speak of for a week before entering the hospital. In the determination of the character of the large tube, the smooth, fluctuating mass in Douglas' pouch should be considered in conjunction with the smaller, more definable supra-pubic mass, which by its size, convolutions, position, and sense to the touch, would indicate its tubal character, the principal difficulties to the examination being a thick layer of abdominal fat, or some interposing mass, such as the omental abscess found in the second case. The distension of the tube is not uniform throughout, but greatest at the fibrinated extremity, and decreases gradually and nearly uniformly

until it reaches the uterus, at which point the increased diameter of the tube depends much on the infiltration and swelling of the walls peculiar to the inflammatory changes. Thus, no matter how much the distal end of the tube may be dilated, the proximal is relatively little, and at a point where it is nearest the abdominal wall is about the thickness of a finger. If the fluctuating mass in the pelvis was an abscess of the tube, there would be, so long as its contents were pent up and under pressure, symptoms of the absorption of the products of suppuration, in greater or less quantity, fever, emaciation, rapid pulse, prostration, etc. If the pressure is relieved by evacuation in part or whole, through the normal passageway or otherwise, the fever and other symptoms may entirely disappear, except perhaps certain pain and disability, and in place of the fluctuating mass a firmness of the tissues is felt which, too, may ultimately entirely disappear, or leave behind a thick, cord-like mass, which by its position and shape will be recognized as an enlarged tube.

A combination of conditions which is difficult to diagnose has recently occurred in my practice, where the symptoms of peritonitis, pain, fever, tympanites, rigid abdomen, etc., were marked, and had led to a diagnosis of appendicitis, and where vaginal examination revealed a fluctuating mass, naturally supposed to be an abscess at the side of the uterus to the right, and extending somewhat into Douglas' pouch. This resembled a distended tube, but operation proved the case to an appendicitis,

without abscess, the appendix having a large ulcer, with thickened edges in its centre, and adherent to a small cyst of the broad ligament. In a case of simple ovarian tumor, tubal characteristics are wanting, and the tumor occupies a position more to the side from which it originated. If a long free pedicle is present the tumor tends to rise upward as it grows.

Where a cyst of the broad ligament of any magnitude is present, the uterus is pushed over to the opposite side, and perhaps so crowded downward and backward into the pelvis that the fundus cannot be felt by the examiner's finger through the abdominal wall, because the tumor rises over and above it. This is due to the fact that as the tumor grows downward between the folds of the broad ligament, the uterus, and rigid bony wall of the pelvis, it at first displaces the movable uterus laterally, beginning at the fundus, which part, owing to its greater mobility, receives the most displacement. As the growth extends upward it receives pressure from the intestines and abdominal wall, which tends to crowd it downward, and which is transmitted to the uterus, tilting it still more, until ultimately it may lie almost crosswise to the pelvis. Owing to the changes in the position of the uterus, and to the position assumed by the tumor, I have known a number of expert diagnosticians to mistake a moderately sized cyst of the broad ligament for the fundus of the uterus. When the cyst has reached considerable proportions there should be no difficulty in making a diagnosis.

Pyelo-Nephritis.—Nephrectomy.—Recovery.

S. VALE GOLDTHWAITE, M. D.,

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SOME of the special points of interest in the following case pertain to the widely differing opinions of several most able and experienced men relative to diagnosis, as the history of the patient will demonstrate, thus exemplifying how easily the best among us are sometimes misled.

I think, also, the history of the case would seem to suggest a greater dependence and reliance on surgical measures, more promptly applied, than on medical dietetic, hygienic or any other mode of treatment.

THE CASE.

Mrs. R., aged 33. Four children. On Labor Day, September, 1892, felt sudden pain in left side, extending across the back, great soreness, tenderness and stiffness over the latero-dorsal region, muscles contracted, body curved inward laterally, could not lie down.

Was very sick and confined to bed two months—pains more or less constant and demanding morphine. During this time the patient lost much in flesh, but regained her usual weight during the following summer while in the country.

Her attending physician—a very able practitioner—diagnosed inflammation of the bowels with typhoid fever.

Patient continued in a fair degree of health, with occasional recurrence

of pain in the side and back for one year.

In March, 1894, began to notice a gray sediment in the urine, most probably pus, according to later developments. Was much alarmed and troubled over this symptom—though in no pain or otherwise disturbed health—and consulted another most excellent physician, who diagnosed cystitis due to a cold. He treated her accordingly for one month. His diagnosis was wholly favorable.

Not improving, the patient saw another doctor, the third, who treated her for congestion of the kidney and prognosed a cure in a few weeks.

In June she visited a very eminent surgeon, who attributed her symptoms to some suppurative disease of the pelvic organs and advised an operation for their removal.

I saw the patient on August 3, 1894. The symptoms had, by this time, become so typical of pyelitis with renal calculus, that I had no difficulty in forming a diagnosis to that effect.

Naturally, after so many different opinions from wholly competent medical men, the patient was now in a sad state of nervous distress—I may say distrust—and it was with difficulty that she was persuaded to again undertake treatment or advice.

It is especially noteworthy that,

through all the later period of her sickness, the patient's chief complaint referred to the altered appearance of her water—she did not complain of pain or any other physical discomfort.

Her urine contained about 1-6 by volume of pus, which was constant, though varying slightly in degree.

A very slight fullness was discovered—though ill-defined and painless—on the left side.

No improvement following treatment, and feeling that there were indications for a more strictly surgical consideration of the case, I asked Dr. Maurice H. Richardson to see the patient in consultation.

He very promptly recognized the exact nature of the trouble, but advised the continuance of medical treatment for a short time, pending a microscopical examination of the urine, although expressing a fear that surgical measures would be demanded later.

The urine was submitted to a thoroughly able expert, who reported a diagnosis in favor of cystitis rather than pyelitis.

Patient failed slowly in flesh and strength up to Jan. 15, 1895, when the pus suddenly ceased to appear in the urine. At once the patient began to improve in every possible manner, eating and sleeping well and in the best and happiest of spirits during four weeks.

Being called again soon after, I found beginning evidence of general sepsis,—alternating chills and fever, a thready and rapid pulse, with a general, vague restlessness, mental and physical.

Dr. Richardson again kindly saw the patient and had no hesitation in advising immediate removal of the kidney. Subsequently the attending physician of another branch of the family was called, who promptly concurred in every particular with the surgical advice already given.

Operation was done on Feb. 27, 1895, under the kindly and most valued supervision of Dr. Maurice H. Richardson.

Chloroform anesthesia, most skillfully administered by Dr. F. P. Batchelder. Assistant, Dr. F. A. King. Also present, Dr. Brewster, Dr. Bond, Dr. Miles and Dr. Hill. Incision from lower border of rib to level of iliac crest—corresponding very nearly to the so-called Langenbeck, that being found to extend over the most prominent aspect of the tumor. No difficulty was experienced in quickly reaching and exposing the kidney, which was found much enlarged:—Length, six inches; width, five inches; thickness, four inches; weight, one and one half pounds.

The separation of the kidney from its capsule was difficult and tedious owing to strong and dense adhesion—and rendered the more so in consequence of the unavoidable rupture of the thin-walled mass, with copious escape of large quantities of pus, which deluged every organ in the abdomen and pelvis. Ureter and renal vessels easily reached and ligated. Comparatively slight hæmorrhage. Wound cavity filled with large mass of iodoform gauze. Incision partially closed with silk-worm gut.



DR. GOLDTHWAITE'S CASE OF PYELO-NEPHRITIS. See page 661.

On passing the catheter at the close of the operation, the bladder was found to contain one pint of pus. I should think a pint escaped from the kidney also during the operation.

In the pelvis of the kidney was found a stone one and one-fourth inches long, two-thirds of an inch wide, and one-half inch thick, the temporary arrest of the pus in the urine having been evidently due to the blocking of the outlet of the renal pelvis by this calculus.

The patient promptly recovered with no distressing symptoms whatever—a fact which I attribute, mainly, to a most thorough and careful flooding and sousing of the abdominal and pelvic viscera with

nearly twelve gallons of sterile salt solution.

In conclusion I would offer as my humble opinion, the advisability of greater care in diagnosis, earlier resort to surgery and—other conditions favoring—the complete removal of the diseased kidney in preference to incision and drainage. Also, I should commend the lateral abdominal route rather than the lumbar, my first two nephrectomies having been done by this method successfully and without difficulty.

I submit the specimen for your inspection—together with a normal kidney for comparison as to size and shape.

Results of Removal of Uterine Appendages.*

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PHILADELPHIA.

THE introduction of the operation for removal of the tubes and ovaries as advocated almost simultaneously by Battey, Tait and Hegar, though upon distinctly different lines, opened up an extensive field for the practice of abdominal surgery. The enthusiasm of their followers necessarily resulted in the practice of the procedure in many cases when it was of doubtful utility. Battey advocated the operation for intolerable dysmenorrhea; Tait for distinctly recognizable patho-

logical lesions in tubes and ovaries, principally of an inflammatory character; Hegar to produce an artificial menopause in cases of uterine hemorrhage otherwise uncontrollable.

These distinctly defined indications soon became extended so that pelvic pain of slight degree, whether associated with menstruation or not, has been considered an excuse for the removal of the organs. Ovaries and tubes have been removed in which careful macroscopic investigation has failed to disclose much, if any, evidence of disease.

*Read before the American Medical Association, Baltimore, May, 1896.

The experience of over twenty years has afforded opportunity to study the immediate and remote effects of operations, which, at least, must have a profound effect upon the mental and physical nature of the individual in the interference with the procreative function.

It is a well-recognized law of Nature that unused faculties atrophy, so that it is not surprising to find that after castration of the unmarried female the genital organs become smaller, the vaginal rugæ disappear, and the mucous membrane is thinner and paler. In the married or those who subsequently marry, sexual desire becomes quiescent or even disappears, and to some the marital relation is painful and repugnant. Instead of being a willing and sympathetic partner in the act, she passes through the stages of indifference and passive suffering to disgust and distress.

If the condition just given were the only unpleasant symptom, it would be a matter of but little moment. The most marked influence is upon the nervous system. It is generally recognized that the climacteric is a critical period in the life of every woman, one to which she looks forward with anxiety, realizing that hereditary traits and unpleasant phenomena are likely then to manifest themselves. If this be true when the woman matures and reaches the period undisturbed, how much more likely is she to suffer when the climacteric is abruptly and artificially induced, without Nature having had an opportunity to prepare her forces for the changed relation.

Every operator is familiar with the flushing, vaso-motor disturbances, not unfrequently affecting the action of every organ of the body. These do not always disappear in a short period, as in the natural menopause, but may continue over years, being a constant source of annoyance and discomfort. While it is true that many patients recover an appearance of good health who were previously great sufferers, in many this improvement will be found to be but temporary. Frequent attacks of neuralgia or neurasthenic pain in both ovarian regions as intense as prior to operation, in the uterus, in the intestines, the bladder, or the rectum, insomnia, restlessness and irritability of temper are not uncommon. Even if the individual may have had no desire for offspring, the assurance that motherhood is denied her frequently leads to intense longing for a child. When, however, she has been desirous for children, and the possibility is precluded by an operation, the declining sexual appetite not infrequently leads to a profound melancholy in which she feels life without solace or comfort.

Changes in pigmentation have been observed, and it has been asserted that through menstruation certain material is eliminated which in its cessation is retained, producing splotches and discolorations of the skin, or the profound nervous manifestations.

The mental and nervous phenomena may be actuated or aggravated by the sequelæ of the surgical procedure, such as fistulæ, ventral hernia.

painful cicatrices, adhesions of intestines to the uterus, to the stumps, and to the bladder; cellular exudation, infection of ligatures, and the formation of abscess, immediately following the operation or years later.

A case recently came under my observation where over four years after castration for bleeding fibroid, an abscess formed, which opened in the upper part of the cicatrix. An incision disclosed a large loop of silk in the abscess cavity.

Leucorrhœa and irregular profuse uterine hæmorrhage not unfrequently follow the removal of both ovaries. Such an array of unpleasant phenomena, associated with the necessary mortality of the procedure when carefully and conscientiously done, should cause the surgeon to hesitate and weigh the condition of each case carefully before resorting to surgical procedure.

I would by no means wish to be understood as denying the necessity and wisdom of operative procedure in necessary cases, but would demand that careful study of the case should

determine that the determined procedure was the necessary course for her relief.

A careful survey of the immediate and remote influences of pelvic surgery justifies the following conclusions:

1. No mutilation or sacrificial operation should be done where there is a reasonable probability of relieving the inflammatory condition through vaginal incision and drainage.

2. Efforts should be made to preserve portions of an ovary and a tube through resection, where partially diseased.

3. Where the ovaries and tubes are diseased, to such a degree as to require their complete removal, the patient is less likely to suffer from profound nervous phenomena if the operation be associated with hysterectomy.

4. Castration should be done for neuroses only after it has been demonstrated by the experience of capable neurologists that the operation is the *dernier ressort*.

A Case of Puerperal Pelvic Cellulitis from Phlebitis.*

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THE following case is described from notes taken by Dr. Clendinnen, of Hawksburn, with whom I saw the patient in consultation:—

*A paper read before the British Gynecological Society on November 8, 1894, and extracted from the *Journal of the Society*.

Mrs. N., aged 28, primipara, a rather weakly woman, for some time before her confinement had a vein of the left leg inflamed, tender and swollen, which gave no farther trouble after her confinement. Her

labor commenced on Wednesday, May 10, 1893. On Friday, the 12th, Dr. Clendinnen was called in, and finding the head stationary and the system suffering, the pulse being 120, at 6.45 P. M. administered chloroform, and delivered with the forceps with some difficulty. Two stitches were placed in a moderate rupture of the perineum. The placenta was satisfactorily expressed, and there was no postpartum hæmorrhage. On the Monday, three days after delivery, she had a short attack of shivering, and was feverish; the temperature on Tuesday, the 16th, in the afternoon, was 101°, and in the evening 102.5°. On the following morning, Wednesday, it was 102°, at midday 103° and in the evening 104.3°. On this afternoon she had an attack of shivering, and dyspnœa suddenly occurred. "The breathing was difficult and jerky; she felt that she was choking, and could not answer; like asthma, she could not breathe; was as if she had been smothered, wanting more air." Brandy and a mixture of ether with sp. ammon. aromat. were given, and she was kept quiet and not allowed to move. On the Thursday the temperature fell to 101°; on Friday the morning temperature was 99°, and in the evening 101°; and on Saturday 97°; on Sunday and Monday in the mornings 97°, and in the evenings 98.2°; on Tuesday morning, the 23d, 104°, and a second attack of dyspnœa occurred, and subsequently two slighter attacks. A slight, rather indistinct cardiac murmur was heard, which disappeared afterwards; and there was no pneumonia, though occasionally a hard cough, relieved by

a cough mixture. The lochia were slightly offensive—removed by vaginal injections of Condyl's fluid. On Wednesday, the 24th, the temperature in the morning was 100°, in the evening 103.5°; and during the ensuing ten days ranged from 98.5° in the mornings to 101.8° in the evenings, with but slight variations. Five-grain doses of quinine three times a day were given during this period.

On June 4, I saw her in consultation with Dr. Clendinnen. By the abdomen there was a sense of thickening, appearing to be an induration in the upper and outer part of the left broad ligament, two inches internal to the left anterior superior spinous process. By the vagina the uterus was well contracted, small, normal and freely movable, and what little discharge there was was inoffensive. The thickening was not felt by the vagina, and on double palpation there was no sense of fluctuation. No sense or symptom of peritonitis presented itself at any time. On this evening the temperature rose to 104.8°, after which it gradually fell with considerable morning and evening variation, till from June 8 to 13 it was tolerably steady at from 98° to 100°, on which last evening it rose to 101.5°; and for the next three weeks ranged from generally 98.2° in the mornings to from 100° to 102° in the evenings.

On July 4 there was still no evidence of fluctuation. On the 10th, similar temperatures maintaining, under chloroform a fine trochar was introduced in three slightly different directions into the indurated tissue, but no pus was found. The temper-

atures subsequently somewhat declined; but from July 18 to August 25 were tolerably steady in the mornings, at from 98° to 99°, and in the evenings at about 102°. For the following week the temperatures in the mornings were from 100° to 101°; and in the evenings from 101.5° to 103°. The left leg had now been for some time drawn up, so that on September 3 the thigh was at about a right angle with the trunk, but there was no cedema. There was also a slight sense of fluctuation in the pelvic fascia internal to the left anterior superior spinous process of the ileum; and under chloroform a fine trochar tapped pus. A large trochar was then introduced by the side of the smaller one, a drainage tube introduced through the cannula, which was withdrawn. From two to three ounces of pus escaped, and the subsequent discharge was quite slight. The temperatures continued high till September 15, when in the evening 103° were registered; but the leg had resumed its normal position and movement; and from this time convalescence was gradually established, the wound closing on Oct. 20. During the five months of illness the strength of the patient was well maintained, considering the conditions. Recovery was complete.

The treatment was by quinine, sometimes in a single dose of from 10 to 20 grains at about 4 o'clock, or in 5-grain doses or less three times a day; by half-drachm doses of the tinct. ferri perchlor.; mild salines were occasionally given for the bowels, and rectal injections; poultices and hot fomentations were ap-

plied to the abdomen. The strength was supported by animal broths, milk and eggs, and as much whiskey, brandy or wine were given as agreed with her—generally from four to six ounces a day.

Of the causations of puerperal pelvic cellulitis this case admirably illustrates in minute detail that by phlebitis. Such cases are exceedingly rare, for the inflamed vein must be of only moderate and probably small size, else the effects would be more extensive and serious than would result in only a suppurative cellulitis, and be at such a distance from the opening of the venous sinus into the uterus, as that the *débris* of the breaking down clot may not discharge itself into that viscus.

The septic phlebitic action must not be too strong, else it might produce suppurative phlebitis, when death ensues from such progressive virulent action up the vein. Nor must it be that somewhat less degree than the above, as when the septic venous inflammation is strong enough to produce such disorganization of the thrombi that large pieces break away as emboli; for then also death is thereby produced. Nor, on the other hand, must the inflammation be of such a mild kind that while there is some phlebitis, resolution presently occurs and the vein heals.

But for the production of pelvic cellulitis by this causation the phlebitis must have just such a moderate degree of virulence that, while the evidence of embolism may be apparent as in this case, the emboli are so small as to have an effect short of producing death, else the patient

would not live to have the cellulitis. By the inflammation of the inner coats of the vein, thrombi form above the septic location, and eventually are organized, closing the vein in the direction of the heart. But enough septic matter remains in the thrombus in the most affected location to prevent its absorption and contraction, and it undergoes a septic suppurative action of low quality.

The breaking-down clot is maintained in its situation by strong healthy thrombi with contracted venous walls on the cardiac proximal and distal aspects; else in proximal feebleness of thrombi, discharge of emboli would occur towards the heart and death result; or in distal weakness of clots, suppurative discharge would escape into the uterine canal. Both thrombi being thus strong and comparatively healthy, the pressure from the central suppurating thrombus is exerted laterally on the coats of the vein at the septic site, which gradually become softened, and ultimately yield to the internal increasing force so that the pus escapes through them into the adjacent connective tissue. The whole action being of such limited virulence, the quantity of pus formed may be inconsiderable in amount, and finally dependent upon the degree of difficulty, and thus of connective necrosis, with which it makes its way in the direction of least resistance in the connective tissue layer, which König has experimented on and described.

The rarity of pelvic cellulitis from this causation is thus explained by the rarity of a phlebitis of such exact degree as is indicated above. In this

case the liability to phlebitis was apparent in the presence of the inflamed vein in the left calf before labor; and the condition of the blood may, therefore, have been predisposing to a pelvic phlebitis after the somewhat severe labor, possibly by an exciting influence of the lengthened pressure of the head on the pelvic structures. Though the uterus was throughout apparently normal, yet it may have been that there was some slight septic absorption. But this is doubtful as to an external virus, for as the phlebitis of the calf might have advanced to suppuration, so may this pelvic cellulitis have so progressed under the influence of damage by pressure.

The evident continuance of the causation throughout the earlier time of the illness is apparent. The slight recurrent embolisms are diagnostic, as well as their cessation, yet continuance of the illness.

The sense of induration without fluctuation indicates the thickening of the connective tissue; and the ineffective first aspiration, so far as the tapping of pus, reminds us of the similar result in the case of a boil, in which the connective tissue is necrotic, but pus has not yet accumulated in appreciable quantity. Yet the punctures probably relieved tension, as the temperatures were for a time reduced. But the latter constant high temperatures show the continuance of the inflammatory and absorbent processes. The drawing up of the leg indicates pressure on and irritation of the pelvic flexor muscles of the thigh; and their relaxation on relief of the pus, the

removal of the mechanical irritant. The long, slow progress and the small quantity of pus finally discharged point to the limited character of virulence of the connective inflammation and necrosis.

Dr. Hodgson said he had three cases very similar to the one recorded in the paper; and he was rather surprised to find no mention of a method of treatment which was not unknown, and which, in his hands, had yielded excellent results, namely, a mixture of equal parts of liquor hydrargyri perchloridi and liquor ammoniæ acetatis. All his three cases had recovered very quickly under this treatment.

Dr. Schacht said that apart from the interest of this case in the fact of its recovery, it had another noteworthy feature, viz., the previous attack of phlebitis. This feature raised the question, whether or not phlebitis was always of septic origin. The case described followed labor, and it was, of course, quite possible that sepsis was the cause; but in view of Dr. Headley's remarks about pressure, it might really have been a case of injury to the veins concerned. Dr. Headley's explanation gained interest from the fact that of late these cases, like those of phlebitis after operation, were all put down to sepsis, whether the patient had gone on well in the meantime or not. He had had a case in which the patient went on well for fourteen days after operation, and then developed phlebitis. It *might* have been septic; but there was no other symptom present to support this view. The patient had a very weak circulation, and the

cardiac conditions might thus easily predispose to thrombosis and phlebitis. Keith had lately recorded a case in which phlebitis resulted a week after the operation of ventro-fixation of the uterus. It was put down in this case to a chill—a cause formerly regarded as quite efficient; and he thought that they would do well to bear this in mind, and to regard chill as a possible cause of phlebitis.

Dr. Leith Napier thought the case an important one. The question had arisen in his mind whether they had not been wrong in so markedly discarding the theory of the autogenetic origin of inflammatory troubles following delivery. He had seen a case lately with Dr. Durno, in which a patient had gone on very well for three or four days after delivery, and then became ill. There was no apparent cause; the labor had been natural, and there had been no lacerations. After ten days the illness became intermittent. He had not the notes of the case with him; but the curious point was that as long as she took liquid diet she remained fairly well; as soon as she took solids—fish, meat, etc.,—she became worse. There had been no ascertained sepsis in the case; and when he saw her, he found her cinchonized, perspiring freely, and looking very ill. The pulse had been slow all through the illness, even when the temperature was high. On examination, the left Fallopian tube was found to be enlarged, and the ovary was felt; but there was no distinct matting of tissues, no cellulitis. It turned out that on several occasions her febrile condition had been relieved

by an attack of dysenteric diarrhœa. He had to give an explanation. He suggested that there might have been previous tubal disease, resulting in adhesions to the bowel; when the bowel became distended, and thus caused dragging on the inflamed appendages, the symptoms developed. He gave a favorable prognosis, because it was his experience that if such patients went on for a month they nearly always recovered. He had recorded a case in which the patient got well after fifty-three days' illness, and he had seen another case of recovery after forty days.

He believed that true phlebitis with suppuration was very rare after delivery; it was possible that in Dr. Headley's case the vein became thrombosed, and the thrombus suppurated. Before tapping, one ought to be certain that there was pus; for if there were not, tapping might produce it.

Dr. Headley had noted an indistinct cardiac murmur; this was a symptom very indicative of puerperal mischief affecting the system. It was not a hæmic, nor was it a valvular murmur, and it often lasted only twenty-four hours. It was frequently overlooked; it was therefore gratifying to see that Dr. Balls Headly had so well combined the rôle of physician with that of obstetrician. Rigors were not now regarded as due in every case to accumulations of pus, but might be esteemed as Nature's danger-signals when the system was in grave danger or distress. The ruptured perineum, in Dr. Headley's case, might have been the starting-point of the cellulitis; this was prob-

ably often the cause. Dr. Headley's theory was ingenious—almost too ingenious; and it seemed to him to offer considerable difficulties, for hitherto no one had been able to precisely gauge the varying influence of clots of different sizes.

Dr. Routh said he thought they ought all to be much obliged to Dr. Headley for his valuable paper. When they met with an up-and-down temperature after labor or after operation, they might be quite sure there was matter somewhere. He had seen cases in which repeated exploratory punctures had yielded nothing, and yet the pus had shown itself at last. He had seen lately the case of a lady who imprudently lay on a couch in front of an open window at the time of her catamenia. She became very ill, and he was sure, when he saw her, that there was pus. Puncture proved it. He let out the matter and washed out with iodine, yet she did not get well, so he feared there was, somewhere out of reach, another abscess. The temperature continued, and one day, when he did not expect it, the hidden abscess burst. There was not the slightest danger from the aspirator if the instruments were clean. He had no doubt that Dr. Headley's case was septic.

Dr. Macnaughton Jones said that he was by no means satisfied that the origin of this case could be traced to sepsis. He quite agreed with Dr. Schacht that they were all too apt to be influenced by the bogus "sepsis" in explaining the causation of suppurative processes and the appearance of pus. He had seen a case of phlebitis, and phlegmasia, with

threatened pelvic abscess, where the trouble was due to an injured varicose vein. He had met with pelvic abscess associated with phlebitis, consequent upon acute miliary tuberculosis. Cases occurred frequently in which no true logical sequence could be traced between the suppurative condition and a septic origin. This question of sepsis after operation required now to be looked at from a dual point of view—the scientific and the social. We first educated the public, and then the public made us its veriest slaves. Before long, following on the recent Russian Antiseptic Society's rule, no surgeon will be able to shake a fellow member by the hand lest he should infect him by so doing. He quite differed from the view of Dr. Routh, that the aspirator could not possibly do harm. In cases with a long-continued oscillating temperature, the question was whether it was not much better to open the abdomen at once, instead of poking about with an aspirator. He had seen many cases go to the bad owing to this plan of "masterly inactivity," and in cases of abscess after delivery he was sure they would obtain much better results by opening the abdomen early. It seemed to him that to allow pus to remain in the pelvis till it became fetid and penetrated through the connective tissues and affected all the annexa, was not sound treatment. If the woman escaped she had very little to thank her doctor for. A puerperal abscess was especially liable to form when the inflammation had a traumatic origin. The blood of some women during pregnancy and after delivery was very prone to inflamma-

tion and suppuration, and they need not look for sepsis to account for every lesion under such conditions.

He noticed, from the paper, that in Australia they had not, apparently, the "ine" mania. Of late, antifebrin, antipyrin, thallin, and a host of similar drugs had come into universal use; it seemed to be thought necessary to administer them in every case, ringing the changes upon them. They were by no means harmless; true, their antipyretic effect could not be doubted, but to reduce temperature was not the end and aim of treatment. Their effect was often to mask the true course of the disease, and thus to obscure the real condition of the patient. He believed that some patients died as much from the treatment as from the disease.

As regards treatment, he was rather fond in these cases of phlebitis of an application of the oleate of mercury, with belladonna, and if the pain extended to the abdomen, the application of the same with turpentine lanolated. He would give as little medicine as possible by the mouth, but would adopt the old plan of giving a simple diaphoretic in the first instance with quinine, and keeping up the strength. If the heart were weak, a little digitalis should be added to the quinine.

There was one point of diagnosis which was often very difficult; namely, to locate the abscess. Again, they had flushing of the face, tympanites, localized abdominal tenderness, very much as in the early stages of typhoid, and, in many such instances, nothing but time would determine the nature of the case.

The "Phantom Perineum" as an Aid to the Demonstration of Perineal Operations.

DENSLOW LEWIS, M. D.,

Obstetrician and Gynæcologist to the Cook County Hospital, Chicago.

SINCE 1886 it has been my duty as well as privilege to give clinical instruction in obstetrics and gynæcology at the Cook County Hospital in this city. As a means of demonstrating the different operations for the repair of perineal lacerations, I devised some years ago an arrangement which may perhaps consistently be called a "phantom perineum." It consists of several bags of cloth of different colors, filled with cotton, which are made to unite in the median line by means of hooks and eyes. The skin is represented by a piece of bed-ticking. The different colors are intended to represent in a general way the different tissues which make up the perineum. By separating the bags of blue color which constitute the uppermost layer of the phantom, a laceration extending only through the vaginal mucous membrane is demonstrated. In case a more extensive laceration is to be shown, the underlying bags of white and red, respectively, are separated down to the brown bag, which represents the rectum, and in that manner a representation of a perineal laceration extending to the sphincter ani is brought to view. Where a complete laceration extending into the rectum is to be demonstrated, in addition to the above procedure, the upper por-

tion of the brown bag may be turned back. The object of the phantom is to impress upon the mind of the student what I regard as the crucial test of the success of every perineal operation, viz.: that it should in effect restore the parts to the position they occupied prior to the injury.

It is my custom in lecturing on this subject to refer to the inevitable traumatism of parturition and to the frequent occurrence of laceration of the vaginal mucous membrane, sometimes extending into the underlying tissues as well. Attention is called to the fact that often times such lacerations are insignificant, and under suitable aseptic conditions may consistently be allowed to cicatrize. At other times, where the birth has been difficult and perhaps tedious, especially in cases of forceps delivery, the students are advised to introduce a Sims' speculum and to inspect the parts critically. In the absence of undue hæmorrhage and with an asepsis which can be relied upon, minor lesions may be allowed to heal spontaneously. Extensive lacerations of the upper part of the vagina, however, which are continuous oftentimes with a cervical laceration, are to be repaired immediately, not only on account of the possibility of subsequent cystocele, rectocele or pro-

lapse, but chiefly on account of the increased danger of sepsis, a danger in direct proportion to the amount of traumatism.

In demonstrating the different operations which are performed in cases of laceration of the vagina or perineal body, I make use of a large needle threaded with cotton string or silver wire. In a laceration of limited extent, as represented by the separation of the two blue bags, the operation for its repair is indicated by commencing at the uppermost part of the laceration and uniting it by a continuous or an interrupted suture which extends to the vulva.

In cases of a more serious laceration, involving perhaps not only the mucous membrane but considerable of the subjacent tissue as well, attention is called to the fact that all this tissue cannot conveniently be approximated by one sweep of the needle without the probability of undue strain on the parts. In lacerations of this character, the union by continuous or interrupted buried sutures is demonstrated by having the suture unite successively the different layers of tissue represented by the bags of different colors. Sterilized catgut is recommended for these operations on account of its absorbability, and the methods of Martin and Hegar are exemplified.

In cases of complete laceration it is recommended that the rectum be united by silk sutures knotted in the rectum, and this operation is easily demonstrated by uniting the separated portions of the brown bag. Attention is called to the fact that after this union of the rectum, the

parts present the same appearance as in the deep laceration already described, and permit of repair as previously demonstrated. The fallacy of the Baker Brown operation, which unites only the skin surface of the perineum, leaving the real laceration still unrepaired, is easily demonstrated upon the phantom by uniting the two pieces of bed-ticking which are intended to represent the skin.

The mode of procedure in case of secondary operation is shown by a piece of yellow cloth representing the cicatrized surface laid upon the lacerated surfaces, as shown by the separation of the bags of different colors. It is remarked that on the removal of the cicatricial tissue, the denudation leaves the parts practically as they were at the time of the original injury. In other words, it is demonstrated that the laceration through inattention has healed up but not together.

The same operative methods are shown in the secondary operation as in the primary, and the important point is again insisted upon, that in every case the bag of each color must be united to its fellow, that the tissues of the perineum must be restored as they originally existed.

Emmet's two operations are also demonstrated by placing a piece of yellow cloth over the separated surfaces to represent the limit and form of the denudation. The wire sutures are passed on the phantom as recommended by this celebrated American gynæcologist, and attention is once more directed to the fact that both in the trefoil and butterfly operations the same practical result is obtained,

namely, the union of tissues of like character as they originally existed.

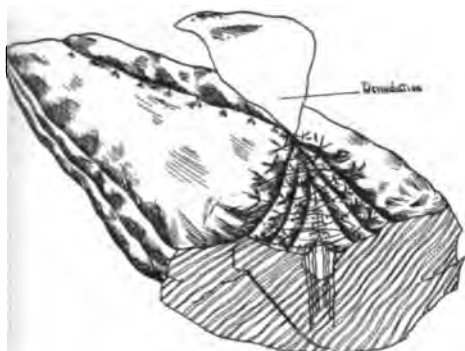
Tait's operations are also susceptible of demonstration. A piece of yellow cloth is laid upon the separated bags, and the formation of a flap is exemplified. It is observed here, as well as elsewhere, that the sutures when tied approximate parts which were formerly united. In Tait's operation for complete laceration, the bed-ticking representing the skin is incised and turned forward, and the sutures are passed, including all the tissues, and here, also, actually restoring the parts.

I have found that students evince great interest in the demonstrations which I make each year upon the

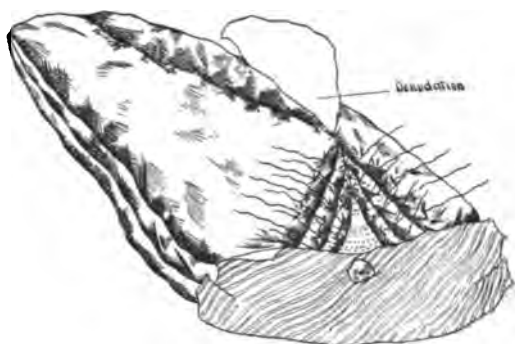
phantom, and I believe they understand the different operative procedures recommended more thoroughly than even by witnessing an actual operation. Indeed it is often my custom to demonstrate the operation, step by step, upon the phantom, while my interne at my side is performing the operation upon a patient.

I submit six drawings, which give an idea of the phantom and its applications. I have certainly found it of very great assistance in my clinical lectures, and I now present it to teachers of obstetrics and gynæcology, in the hope that it may prove of benefit to them.

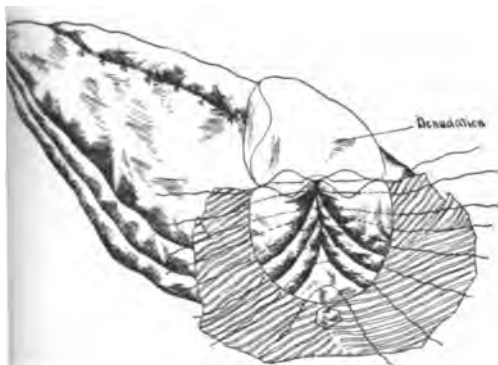
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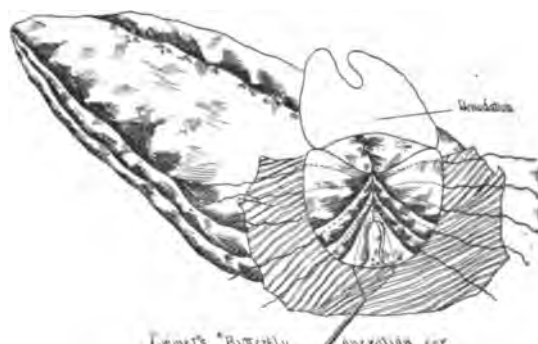
Restoration by continuous suture.
Rectum closed by interrupted sutures.



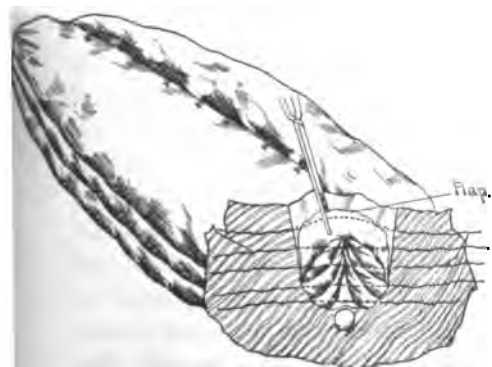
Restoration by interrupted sutures.



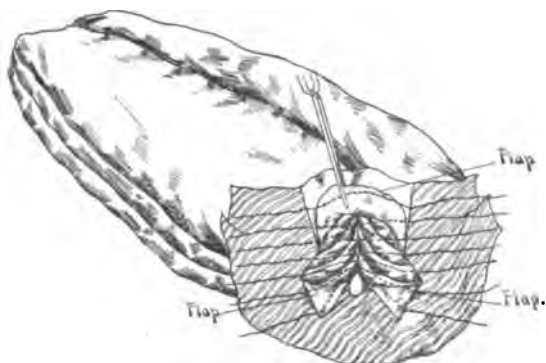
Emmet's operation for incomplete laceration



Emmet's "butterfly" operation for complete laceration.



Tait's operation for incomplete laceration.



Tait's operation for complete laceration.

Concerning the Principles and Practice of Episiotomy— Why Central Preferable to Lateral.

FRANK A. STAHL, M. D., CHICAGO.

(ABSTRACT.)

THE author said that nature teaches that she endeavors to establish a favorable relativity in size, axes and diameters between those of the mother and her parts, especially the pelvis, and those of the foetus and its parts. Where this is there is the normal; where otherwise there is the abnormal, requiring corrective assistance, whether at the superior strait in the cavity or at outlet, and then either by nature or the accoucheur. At the outlet nature endeavors through dilatation of the soft parts to overcome any inequality in the soft and osseous anterior-posterior diameters, and any disproportion between foetal part and pelvic outlet. Failing in this, nature assists with midline separation a natural central episiotomy, as it were; obstetrical thought though inclines rather to the lateral method.

Michaelis (1799) is accredited with having been the first to have performed the operation, and he, like Ould, 1742, advocated episiotomy in the midline. In 1836, Ritgen suggested scarification of the outlet, but his theory is lacking in efficacy as well as in principle. In 1850, Eichelberg, and in 1852, Scanzoni brought out and recommended lateral episiotomy, the method as generally practiced today, lateral incisions from one to three centimeters in length. More recently, Cohen suggested subcuta-

neous myotomy of the sphincter cunni, a suggestion failing again in efficacy and principle. As is to have been anticipated, the impracticability quickly proved itself when attempted at the bedside. Since Ould's time more or less interest has been shown in episiotomy, yet more interest than practice; its principle has always been regarded with favor, not so the method.

In America, renewed interest seems to have been awakened in episiotomy, following the appearance in 1878 of Dr. Anna Broomall's most excellent and exhaustive article, which was soon followed by those of Credé and Colpe, Manton, Wilcox, and many others in close succession, one of the last to appear being by Dickinson, well illustrating his conception of the principles and technique to be followed in lateral episiotomy. They, like our text-books, favored the lateral method, and the consensus of opinion today is to favor the lateral method. The success with the lateral method has been such that though the writers above referred to have all warmly recommended lateral episiotomy, the success, or perhaps the lack of success, which this lateral method has met with in the hands of the general, as well as special practitioner of obstetrics, has been and still is such that

opinion at the present time is less enthusiastic toward the operation than formerly, many discarding it altogether as without virtue or value. This feeling is quite plainly reflected in the words of Professor Parvin, who, in reference to this operation, concludes as follows: "It may be stated that episiotomy will very seldom be plainly indicated, and in private practice will rarely be done." Very similar in tone writes Professor Lusk: "It (episiotomy) is essentially the operation of young practitioners, the occasions for its employment diminish in frequency with increase of experience"; and further, Chaillly-Honoré, the most enthusiastic advocate of lateral episiotomy (Broomall), refers to it "as the excellent practice of Prof. Dubois, who taught that incisions should be made, extending in an oblique direction, not to exceed two centimeters. He admitted, however, that perineal ruptures cannot be always avoided," etc., an expression very clearly showing his doubt in its efficacy and that nature often assists post operationem.

Episiotomy, he believes, meets with so little kindness, not because episiotomy *per se* is at fault, but rather it is the method in which opinion dictates it should be performed. Opinion has mislaid and instructs to adopt the lateral method. On the other hand, nature says and requests to elongate in the midline. It is opinion that has endeavored to misdirect, but nature, like truth, will assert herself. Still, he could readily agree with these gentlemen in their adverse conclusions, but only in so far as their remarks apply to lateral episiotomy,

because lateral episiotomy is wrong in principle and very lacking in efficacy. This is not so with Nature's method, central episiotomy, which, in principle, he believes is correct, and that is to elongate and increase the circumference in the direction of the essential diameter of the soft outlet, the antero-posterior, thus equalizing the diameters of the soft and osseous outlets and establishing the natural favorable relativity. Lateral episiotomy does not accomplish this. At the outlet it is to and through this shorter antero-posterior soft outlet diameter that the longest diameter of the foetal part must pass; therefore, if dilatation be not sufficient and inequality of diameter exists, correction in this diameter becomes a necessity and occurs. Observation teaches this, so does Nature, and central episiotomy thus becomes the natural method. In his humble opinion, at the present time there is no subject before obstetrical thought which attaches greater importance to itself than does this matter of episiotomy.

Society as we find it today has a tendency which is growing together in large bodies and crowds itself within very narrow lines. Under these unfavorable hygienic conditions the physical must suffer and does. Scientific inquiry and statistical research will prove this. He agrees and believes that all obstetrical observers will also agree with Duncan, who, upon this feature of the evolution of the species, expresses himself as follows: "That in the Darwinian progress of the species the head of the foetus has increased in size more rapidly than the orifices and passages

through which it has come have increased in size and dilatibility. Nature has always recognized this, her parturient outlet weakness, and has directed man to her mode of correction; if he will not correct and assist and in a way as she indicates, then she will and does."

In his hands episiotomy is an instrument, par excellence, aiding as no other instrument can in the preservation of life and body both in the foetal and maternal, and as he grows in obstetrics and since he finds that the disproportion does not decrease, he is glad to know that there is so effectual and simple an instrument as central episiotomy at his command. In private practice it has often assisted him in saving the life of the foetus and always in preserving the perineal body and other parts of the soft outlet.

In nearly all cases of accouchment forcé, as turnings, high and low forceps in primiparæ and well preserved pluriparæ, and in 20 per cent. of so-called normal deliveries, disproportion between pelvic outlet and fetal part exists. Especially in turnings in the primiparæ and well preserved pluriparæ has he found episiotomy of great service. Formerly greater exertion and danger to life were encountered to extract than in the intra-uterine turning; now, with central episiotomy with increase of deep circumference and essential diameter, turning and extraction is accomplished with less exertion, less danger and more comfortable to all three concerned, mother, foetus, and accoucheur.

Lateral episiotomy as practiced in-

creases the non-essential and normal transverse and oblique diameters, and to a slight extent the superficial circumference of the outlet. Unless made with regard *primarily to depth* (5 millimetres in a line are practically without effect), *regardless of number or length of incision, that the intervals between the incisions may fall back as a tongue of perineal tissue, lateral episiotomy is absolutely without effect upon the essential antero-posterior diameter.* But such a practice compared to the single, simple, non-dangerous incision of central episiotomy is excessive, requires greater effort to perform and to restore, is more dangerous and requires a longer road to arrive at an inferior result. Therefore the ill success and apathy of the general and special obstetricians towards lateral episiotomy.

The author argues that the "parallelism of pelvic outlet forces" theory favoring radical incisions is weak, especially that the greatest resistance at the outlet is not, as the theory suggests, in a radial manner, but centrally. He mentions other points in his argument. He compares in outline the outlets of the pelvic floor to a flattened, unequally looped figure of eight. The larger loop with longest diameter antero-posterior corresponds to the parturient canal outlet; the smaller more circular corresponds to the alimentary canal outlet; as connecting link between these loops and encroaching upon the calibre of both canals is the perineum. If the circumference of either loop be too small to permit a body to pass, especially an ovoidal body with a longer longest diameter

in the antero-posterior, the most simple and effectual way to increase that circumference, and at the same time to neutralize the inequality essential in diameters, is to overcome the uniting encroaching link, and this will be in a line with its midline, its antero-posterior diameter. Separation of the soft perineal link in the midline increases the superficial and deep circumference of the parturient outlet, and in a direction equalizing the essential osseous and soft outlet diameters with less expenditure of energy to perform and to restore with less danger to body and life, and is more practicable than any other method.

So far as the technique is concerned, Dr. Stahl had nothing to add to what is already so well-known. All that there is required is a pair of

blunt-pointed scissors. In high forceps and turnings in the primiparæ and the well-preserved pluriparæ, where the foetal parts have to be dragged through an undilated vagina and outlet, where disproportion between foetal part and outlet is always considerable before applying the blades or attempting to turn, he stretches the undilated perineum between two fingers and severs in the midline through the whole perineal body, through vaginal, parenchymal and dermal parts, as far as necessary, even to the sphincter ani, stops hæmorrhage where any, then applies or turns. In low forceps or normal labor, he severs as recommended by B. Schultze, only then when "the commisure shows signs of yeilding," following in both cases with immediate post-partum perineorrhaphy.

Advisability of Vaccination During the Existence of a Skin Eruption.

J. ABBOTT CANTRELL, M. D.,

Professor of Diseases of the Skin in the Philadelphia Polyclinic and College for Graduates in Medicine, Dermatologist to the Philadelphia Hospital and to the Southern Dispensary, Philadelphia.

Dear Editor:—The question as to the advisability of vaccinating a person during the existence of a skin eruption having been frequently in evidence, I take the opportunity at the present time to make answer through the medium of your journal. Within the passed few months the question certainly has arisen more

than at any other time, owing to the apparent fear that we would be visited by an outbreak of variola. It is certain that the patients themselves often fear vaccination during the existence of the skin condition, because of the danger of making their feelings worse than they have been with the cutaneous manifestation. While this

is to a certain extent well founded, I do not think any one will be afraid when they are aware that no danger to life will intervene. Within the past few days the question has been asked by the parent of a child having psoriasis, he stating that wherever the child was bruised he would be confronted with a new psoriasis lesion in a few days. Naturally one would hesitate before giving a positive opinion in such a case, on account of the

supposed idea that psoriasis often occurs after wounds of any character. Having been asked an opinion in this case, I did not hesitate to give the following advice: that I thought it would not be inadvisable to vaccinate. And I cannot hesitate to give the same opinion in cases of any eruption of the skin. I would advise that vaccination be performed in any case of any eruption of the skin.

315 South Eighteenth Street.

The Present Status of the Electrical Treatment of Fibroids.*

A. LAPHORN SMITH, B. A., M. D.,

Member of the Royal College of Surgeons of England; Fellow of the American Gynecological Society; President Electro-Therapeutic Association; Surgeon-in-Chief of the Samaritan Hospital for Women, Montreal; Gynecologist to the Montreal Dispensary; Surgeon to the Women's Hospital, Montreal.

At the full flow of the tide of the most successful surgery the world has ever known, one must possess a good deal of the courage of his convictions to rise in the presence of such a distinguished audience as this, to even discuss, far less to advocate, the treatment of tumors, even the most benign, by any other method than the surgeon's knife.

Appearing on the program of this meeting, surrounded as this paper and its author are by papers and surgeons advocating every kind of surgical treatment, from tying the uterine ar-

teries to removing nearly all the pelvic contents, my position is a peculiarly difficult one, the more especially as I have been trained as a surgeon and occupy a position as surgeon in several hospitals, where I am often compelled by circumstance to treat fibroids by surgical procedures.

It is only fair that I should say at the outset that I did not choose this topic for my discourse; it was assigned to me by our esteemed chairman, who, in order to preserve the high reputation for impartiality which should characterize the conduct of the presiding officers of all scien-

* Abstract of paper read before the section of Obstetrics and Gynecology of the American Medical Association, at Baltimore, May 7, 1896.

tific meetings, and which has been possessed to an eminent degree by the chairmen of this section of the association in the past, no doubt wished that justice should be done to all methods of treatment at present employed. So strong is my own personal taste for surgery, especially of the abdomen, that I might have been tempted to disobey the chairman's command, but for two reasons:

One reason why I felt compelled to fulfil the duty was, that as I reflected upon my work during the past seven years, there passed before me the image of some fifty women whom I had treated for fibroids by electricity. First, as they appeared when I saw them, with faces anxious with pain and blanched with hæmorrhage; and then, after their pain had been relieved and their bleeding had been stopped by galvanism and their cheeks had resumed a rosy hue, these fifty women's faces encourage me to do justice, though the heavens may fall, to the treatment which has cured them.

Then there pass before me the dying faces of *ten* women who were treated by total extirpation, at two of which operations I was the executioner; at six of which I was the first or second assistant; and at two of which I was only a spectator.

True, the majority of the ten operations were performed in the pre-antiseptic days, though by a great master in this department of our art; but four of them were performed within the last few years, under the most rigorous aseptic precautions, by men who have a low mortality in general for abdominal surgery.

The memory of these fifty women who have been cured by electricity, many of whom I could find, if required, and many of whom to this day stop me in the street to thank me and it for their rosy cheeks; and the memory of these ten women who are now no more, all tell me that I would be a traitor to the cause of truth if I remained silent, not only out of season but in the very hour when it most needed to be spoken.

True, I can quiet my conscience when circumstances compel me to operate by the reflection that one woman died while under electrical treatment, not through electricity, but through an error of diagnosis for mistaking a tense imparted liquid tumor for a fibroid, which would not have been made if the abdomen had been opened, or, in other words, if the treatment had been surgical instead of electrical. This is the one and only case in which, as far as my experience goes, I have ever had to seriously regret the use of electricity.

I can still further soothe my conscience when I am compelled to operate by remembering that I have operated on ten women, seven by abdominal hysterectomy, treating the stump by leaving it transfixed at the lower angle of incision, and three by removal of the appendages, tying the ovarian arteries low down, and of several others treated in the latter manner, at which I was first assistant, all of whom recovered and are now in good health.

When I visit the City of Brotherly Love, where the surgeons have declared war to the *knife* upon the electrode, I am often placed in an

awkward predicament. When I tell my friend Dr. Joseph Price that I am going to spend a few hours at the electrical clime with Dr. Massey, he is surprised that a man of my intelligence can waste his time in such fiddle-faddling nonsense, and it is useless for me to assure him that I can show him many women in Canada, from Manitoba in the west to New Brunswick in the east, who are the picture of health, and who have been cured by electricity.

On the other hand, when I tell my friend Dr. Massey that I am going to spend the morning with Dr. Joseph Price extirpating fibroids, he looks with pity on my bloodthirsty taste and misguided energy. In vain I tell him that life is too short to treat all my fibroid cases by such means.

In this somewhat peculiar position which I occupy I have one consolation, and that is, or at least I hope that it will be so, that the conclusions which I shall presently lay before you are those of one who is entirely unbiassed and non-partizan, and consequently to be accepted, as far as they go, in good faith.

My own opinion on the present status of electricity in the treatment of fibroids is fully made up, and I shall now endeavor to lay it plainly and honestly before you.

During the last year especially, although it has been growing gradually for several years, the conclusion has become evident that electricity is not suitable for every kind of case nor for every kind of doctor (not for the very busy doctor).

It is as true to-day as it ever was

that, for the cure of pain in and bleeding from the uterus, the application of the positive pole of the galvanic current, properly applied, and of sufficient strength to the internal mucus membrane, is in the majority of cases effective. The percentage of successes is greatest in those cases in which the fibroid growth is interstitial; not quite so great in the cases of sub-mucous growths, although in several of these cases a few applications have been followed by the expulsion of the tumor from the uterine cavity. The earlier the cases come under treatment the more surely are they cured, many patients with small interstitial tumors in the anterior wall having been cured by me, and still more under the care of others. So that the plea for the early treatment of fibroid tumors by electricity is quite as just a one as is the early plea for operative treatment. Indeed, it is even more so; for while we can truthfully say that the electrical treatment, when undertaken early, and with a correct diagnosis, is at the present day entirely devoid of danger, no one can truthfully say the same of the treatment by operation. In fact, I am sorry to say that no one knows what the death rate of the latter treatment stands at. Three of the ten deaths which I have above mentioned have never been reported, and six of them were only reported at my urgent solicitation.

May there not be many other similar cases? When a woman comes to a doctor for menorrhagia and he discovers a small fibroid, is he to urge her to submit to an operation, when

he knows with the greatest skill and care she runs the risk of dying from the operation, while, if let alone, the death rate is not more than one per cent., while with electrical treatment, the risk is absolutely *nil*?

When she tells me that she will not submit to an operation, will I assure her that I can do nothing for her, when I carry in my pocket the record of fifty similar or worse cases which have been cured by electricity? Surely that were dishonest. And yet the temptation to operate, in spite of the danger of surgical and the safety of electrical treatment, is very great—too great in some cases for us to resist.

Ours is a busy life, and there is not one of us here who has not often felt that life was far too short to accomplish all the good that we would wish to do, and, for the want of a few more hours in the day, much work of value to our fellow beings must go undone.

With this feeling strong within us, a poor woman applies at the outpatient department of our hospital with a small interstitial fibroid which has, however, doubled or trebled the bleeding area of the internal mucous membrane. We believe that we could cure her by a more or less tedious course of treatment with electricity of from ten to fifty applications if there are no facilities at the hospital then at our office. If at the hospital, the time required for this case would seriously encroach upon the time allotted to our service there; if at our office, there is the same as well as other objections. And when we have made the sacrifice and cured the

woman, what is our reward? Perhaps, but not always, the woman's thanks. Our own feeling of having done well, surely. But when we turn to our brethren, whose esteem is and should be the greatest incentive that we can look for to good work, well and conscientiously performed, what do they say? We have no fresh and bleeding tumor to take to the medical society, as an Indian waves a white man's scalp, before our admiring brethren as a trophy of our prowess and our skill. I have shown the women over and over again, I have shown their clothing, which had to be taken in as much as seven inches, owing to the decrease in size; the women themselves have offered to state on oath that their bleeding had been arrested and their pain removed, and their general health improved. How were these triumphs of therapeutic skill received? With loud applause you will say, "No indeed." The praise bestowed upon the exhibitor of even an apparently healthy appendix, the removal of which was followed by the death of the patient, is received with acclamations loud when compared with the manner in which is received the report of a case of cure by electricity. Indeed a sincere friend and admirer in our society warned me privately that my reputation was injured every time I showed a woman who had been cured by this means, and he urged me to show no more. But I must continue to cure them by that means, as far as my time limit and life limit will allow.

How different when we report an operation, whether the patient lives

or dies. Everybody seems pleased and praises us in proportion to the danger to which our patient has been confined. But, if she dies, there are two at least who must regret that it was performed: the patient and the doctor; and sometimes there are the husband and the little children who are very much concerned. But how much easier to take the patient into the hospital, and in a few days perform hysterectomy, which we can do in a quarter of an hour sometimes. It is as the French say, *un mauvais quart d'heure*; but it is soon over, and the patient's fate is sealed for weal or woe when we have put in the stitch which closes the peritoneal cavity.

But, with the electrical treatment, what with getting the patient ready, carrying out the asepsis of the vagina and adjusting the apparatus, I have spent as much as one hundred precious hours on a single fibroid case. But the ovaries remained, and many of the women are now the mothers of children, and others are happy wives, capable of bearing children, though childless.

I have lately asked several well known men, men of the highest surgical reputation (you would be astonished if I mentioned their names,) whether they had employed the electrical treatment with good results, and they have assured me that they had, although they have never reported them; and, on asking them what was the principal objection to it, they replied, in confidence, that it took too much of their time. And this, it must be admitted, is a serious objection to it, but not an insur-

mountable one. There are two ways in which it may be surmounted; one is by having an assistant whose time is less precious than our own, who has been trained to carry out the treatment with accuracy and care when we prescribe it for the disease which our more experienced touch has diagnosed. And the other is by having several rooms and a nurse to prepare the patient, including the antiseptic vaginal douche; and by devoting two afternoons a week, and having these patients come only at that time, as many as six treatments an hour might be administered.

Never before has it been so well demonstrated as it is today that by division and subdivision of labor, the artist becomes more and more expert. It does not surprise me therefore, that the best results of the electrical treatment of fibroids is obtained by such men as Apostoli and Massey, who employ this treatment alone. They both obtain results which neither I nor any other operating gynecologist can hope for. In every large city we should encourage some one man to establish an electrotherapeutic clinic, where one poor patient at least might obtain the benefit of his skill in electrical technique, after having obtained the benefit of our experienced diagnosis; in time his reputation would reach the ears of the rich, and he would then have some substantial reward.

I must trespass on your time yet a little more while I refer to two points. One, a claim which has recently been made by Apostoli for the electrical treatment, which I can heartily endorse, and the other, an

objection which has been made to it, which I can as heartily deny.

Apostoli has discovered that the very failures of electricity can be turned to advantage in the following manner: It has been found that in those cases where the electrical treatment has been badly done and has been followed by febrile reaction, so that the patients have been turned over to the surgeon for operation, the presence of pus tubes and pelvic peritonitis has been discovered. Apostoli has pointed out that electricity may be employed as a diagnostic agent for the purpose of detecting diseased appendages.

A remarkable instance of this came under my notice a little over a year ago. A young woman who had been employed in a restaurant in a New England town, gradually lost her health, with pain and hæmorrhage. She suffered agony with her periods, which came too often and lasted long, so that her face was blanched and haggard. There was no difficulty about the diagnosis, as the tumor was large, round, symmetrical, and in the median line and extending up to the umbilicus, and could be easily seen and felt bulging up the abdominal wall. Several physicians in the United States, her family physician in Montreal, as well as myself, all agreed that it was a fibroid. One of them had tried electricity several times, but always with bad results, and so did I. As she was laid up in bed for several days each time, I concluded that the appendage was diseased, and after three applications I decided to stop and perform celiotomy. On opening the

abdomen the tumor was at once seen, surrounded by adherent intestines, but it still appeared a symmetrically pear-shaped fibroid. I could not, however, detect the ovaries and tubes, and while digging around for them I made a line of cleavage, which being followed up I was able to dissect out a portion of the tumor, which proved to be a sausage-shaped pus tube, which was delivered intact, tied and cut off. Then followed a large cystic ovary; then the other tube which broke and inundated the field with pus, and then the other ovary, by which time the supposed fibroid was gone and only a moderate sized uterus remained. The pelvis was carefully washed out and drained, the patient made a rapid recovery, and is now at work and enjoying perfect health. So that in this case Apostoli's dictum, that when the application of his method causes febrile reaction the tubes are badly diseased, was fully born out.

Now the objection to electricity, which has so often been made to it, especially by one of my most esteemed friends in Philadelphia, that it causes adhesions, is not true. I maintain that one has no right to bring that charge. First, if fibroids which have never been treated by electricity do have adhesions; and second, if fibroids which have been treated with electricity can be proved not to have become adherent.

Now I am in a position to prove both of these facts. When in Baltimore two years ago I saw the abdomen opened for fibroid; but it was so adherent to everything, intestine and abdominal walls, that the operator —

one of the ablest in the world — did not consider it possible even to get the ovaries out, and the abdomen was sewed up. Now this case, the most covered with adhesions I have ever seen, you will say had received many applications of electricity. But careful inquiry elicited the fact that she had never received a single application of electricity. But that is only negative evidence. Let me see about some positive evidence.

Three or four years ago I treated a lady — head mistress of a large public school a thousand miles away — for hæmorrhage and pain, by means of intra uterine positive galvanism. She had received one year's leave of absence from her important duties; and the commissioners had advanced her a year's salary in order to regain her health, she being utterly incapacitated for work. She submitted to a very rigorous application of the treatment three times a week with great fortitude, as high as 200 milliamperes being frequently given at a time. And this was not for once or a dozen applications, but for one hundred times. By this time the bleeding and pain were nearly if not entirely arrested, and I advised her to complete the cure by a few months rest at her old home down by the sea in New Brunswick. This she did, and came back to me in July with rosy cheeks and sparkling eyes. She and I would have been perfectly satisfied with the result, and I should have reported her among my cures had it not been for one thing, and that was that she asked me the question: "Can you promise me that the awful hæmorrhages will not return after I have

gone to my far-away home in the west?" This I could not answer her affirmatively.

Her next question was: "Is there any other treatment by which you could guarantee that result?" My reply was: "Yes, one only; and that is hysterectomy."

Although the operation was not required by her then present condition, yet owing to her financial situation, which would preclude her ever coming to Montreal again, at her urgent request I removed her uterus.

Now if the charges against electricity have a vestage of truth in them, I must have found the tumor covered with adhesions. But what was my astonishment on opening the abdomen and screwing a cork-screw into it to be able to lift it out smooth and shining as the top of a man's bald head; the transfixing of it with pins and circling it with the *serre nœud* wire was the work of a few moments, and in a minute more the tumor was off. She ran her five or ten per cent. of risk of death safely and made a splendid recovery, and was at the head of her school once more on the first of September.

One such case carries more weight than a thousand assertions that electricity causes adhesions.

But I can duplicate it. A young lady, who is now a trusted nurse in a New York hospital, came to me the first year I used this treatment for hæmorrhage and pressure symptoms caused by a large fibroid. She improved so much that I decided that she ought to go home by the time she had received fifty applications. But after the last application she began

to flow before the time, and I asked her to wait until it stopped. It lasted seventeen days; a steady little stream of dark blood. I became momentarily discouraged, and advised operation, which was accepted; but I handed her over to a more experienced operator than I was at that time. I assisted at the operation; and the tumor came out without the slightest difficulty, and was removed in the same way. As in the case mentioned above, I examined it most carefully; and the only trace of an adhesion to be found was a spot about the size of a silver five-cent piece, where the tumor had rubbed upon the brim of the pelvis on the right side, and where she had often complained of pain before coming to me. But there was not a sign of adhesion in the track of the direct current, nor anywhere else, except at this one spot. The hæmorrhage was due to a tiny opening in a sinus, caused by the end of the electrode.

There is one charge, however, which was frequently brought against the electrical treatment of fibroids, or rather against a method of applying it in the past, and which was well deserved, but which is no longer applicable, because no longer employed. I refer to the method of galvanic puncture.

The greatest claim for the electrical treatment of fibroids that can be made for it is that, it has no mortality, that it is absolutely safe. If it is not safer than any other treatment, or in fact unless it is absolutely free from danger, there remains only one advantage in its favor, namely, the saving of the ovaries. But galvanic

puncture, no matter how performed, whether by vagina or through the abdominal wall, must ever be a procedure fraught with danger, and is to-day practically abandoned. If any one still uses it, I beseech him to use it no more. The positive pole of the galvanic current, gently introduced into the uterus, will accomplish our object by unseen but no less certain means. It dries up the bleeding mucous membrane, and by its tonic action upon the muscular tissue, through which must pass the vessels carrying nourishment to the tumor, its bloody supply is cut off just as surely as though we tied the ovarian arteries, which supply the body of the uterus. The action of the electric current as applied to fibroids is three fold. The first is not mysterious, it is but the arrest of circulation in dilated capillaries by an electro-chemical cautery. The second is no more difficult to understand than the action of ergot or strychnine; it not only tones up the vasomotor system, making the calibre of the arteries less, but it calls into play the special and remarkable power which the uterus possesses of controlling its own circulation when it has the strength to contract.

The third effect of the current, its electrolytic action, is, I admit, as mysterious as it has ever been, but not more so than the invariable absorption of syphilitic gummatous deposits following the administration of iodide of potassium. Whether what we call electrolysis means the actual breaking up of an organic tissue into inorganic atoms, or whether it means, as seems more likely to me, that the

growth deprived of its blood supply undergoes fatty degeneration and is partly eaten up by phagocytosis stimulated to greater activity by the trophic nerves, no one with a large experience with this subtle fluid can deny that a uterus infiltrated with and enlarged by the deposit of fibrous tissue, whether localized in the form of fibroids or diffused as in areolar hyperplasia, so that the sound will enter four or five inches, will invariably diminish in depth by means of electrical treatment.

Then again what is the enormously enlarged uterus after delivery but a bleeding myoma? Does it not stop bleeding when the arteries which supply it with blood are squeezed by its contracting walls? Does it not rapidly get smaller when for the want of blood and exercise that immense mass of muscular tissue silently undergoes fatty degeneration and returns to the blood from whence it came.

Wonderful and almost incredible as the total disappearance of a fibroid or myoma may seem to some, it is no more mysterious than this wonderful process of nature which we call involution. Have those who doubt and even worse, deny the power of electricity to work a change in fibroids, never reduced the size and

weight of a uterus which nature had failed to involute? Has Emmett never reduced its size by repairing a lacerated cervix? Has Churchill and Athill and ten thousand others with honored names never reduced the quantity of tissue in the uterus by the application of iodine? Have not a hundred thousand others never reduced the weight of blood and muscle and areolar tissue in the heavy uterus by means of glycerine and hot water and other therapeutic measures?

Then why in the name of reason and justice will you deny that an agent which we can see blanching tissues before our eyes, and making muscles of every kind contract, why will you deny, I say, that it can diminish the blood supply to and favor the fatty degeneration and absorption of the fibrous or myomatous uterus?

Gentlemen, the electrical treatment of fibroids, reduced to the above simple equation, and stripped of all the extravagant claims which were at first made for it, stands to-day upon a foundation so strong and true that it will find an honorable place in the treatment of fibroids as long as women shall dread to die by the surgeon's knife,—as long as the world shall last.

Ectopic Pregnancy.*

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FOR all practical purposes all cases of ectopic pregnancy may be considered as primarily tubal. Other forms of ectopic pregnancy may possibly exist as primary conditions, but if so they are very rare. Interstitial pregnancy, including as it does a part of the tube, is classed as tubal. Tubal pregnancy usually continues as such from six to thirteen weeks, when by distention rupture takes place in one or two directions into the peritoneal cavity, forming intra-peritoneal hæmatocele, or between the folds of the broad ligaments forming extra-peritoneal hæmatocele. In either case the placenta may take on new attachments, and the fœtus may continue to develop and grow in its new position to full term or till placental separation causes another hæmorrhage.

Till recently not many cases of ectopic pregnancy were diagnosed as such, till rupture had taken place, and even now the condition is not recognized as often as it ought to be, till rupture of the tube with its accompanying shock is encountered. Many cases do not come under the observation of the physician in the early stages, and sometimes when they do the symptoms presented are not always such as to enable even expert

diagnosticians to make a correct diagnosis of the case. I have seen but two cases of unruptured tubal pregnancies operated upon, and in neither case was a diagnosis of pregnancy made till the abdomen was opened. In many cases, however, a careful study of the history and symptoms will enable the physician to make a correct diagnosis when rupture takes place, for then the life of the patient depends upon the course of treatment followed. All cases of tubal pregnancy where the diagnosis has been made before rupture, should be operated on at once. If there is uncertainty as to whether pregnancy exists or some other tubal disease, the operation should be done.

When rupture into the peritoneal cavity takes place, the operation should be done as soon as the patient recovers from the immediate shock.

When rupture takes place between the folds of the broad ligaments, forming an extra-peritoneal hæmatocele, the urgency for operation is less, and in most of the cases no operative interference is necessary primarily, and in but a small number secondarily as a result of suppuration or recurrent hæmorrhage. I know that a number of able and expert operators advocate operation on every case, claiming that many cases diagnosed as extra-peritoneal are intra-

* Read before the Michigan State Medical Society, June, 1895.

peritoneal. In this connection I report briefly the histories of four cases recently encountered. First, two cases of extra-peritoneal rupture.

Mrs. B., aged 40. Mother of five children; youngest five years old. Had missed one menstrual period and was approaching the time for the second, when she had an attack of uterine pain, followed by a gush of blood; pain ceased. Two days later, while standing on a chair fixing a window curtain, had another attack, with several gushes of blood from the vagina, which recurred at intervals for three days, then ceased. Two days later was seized while in bed with intense pain in the pelvis on the left side and became very faint. I saw her a few hours later and found a large mass, filling the pelvis on left side but circumscribed, uterus pushed to the right side and cervix under the arch of the pubis. She complained of rectal smarting and tenesmus. Upon introducing my finger into the rectum, a constriction was encountered, through which my finger passed with difficulty, the blood evidently discharging up the peritoneum and pressing on the rectum, as described by Tait so graphically. I did not consider operative interference necessary. She made a complete recovery, and in three months was as well as before.

CASE II.—Mrs. H., aged 22. Married one year. Had a history of gonorrhœa shortly after marriage. Missed two menstrual periods. Considered herself pregnant. At tenth week had bloody discharge from vagina, recurring every two or three days, sometimes with pain. Noticed a few shreds of membrane. One

week after first discharge was seized with intense pain and shock. Her doctor was called, and thought that she was having an abortion. The pelvis was filled with a globular smooth mass. The uterus was pushed up so high that it was with difficulty the cervix could be reached behind the pubic arch. The conditions were such that he thought best to call a consultant, which he did the next day; but the consultant was certain that it was not a case of abortion; and as neither of them had, in a very long experience met, with such a case, I was sent for. I found the pelvis full. Cervix could be reached with difficulty. A smooth surface rounding up above the pubis, almost like a large soft fibroid. No evidence of hæmorrhage into the peritoneal cavity. On rectal examination, the same condition existed of constriction. The pain in this case was referred to the right side. Here then was a case of pelvic hæmatocele, lifting up the peritoneum from the whole pelvic floor, forming a dome above. She had rallied well from the shock, and as there was no urgency for operative interference, I had her watched carefully. She had no increase of temperature, and ultimately made a complete recovery. There was for a year a small lump on the right side, but that has entirely disappeared. This was the largest case of extra-peritoneal hæmatocele that I have seen. I have seen many other cases of much smaller and more limited hæmatocele, some of which have passed on to suppuration, which I have opened into the vagina. I have seen two cases of extra-peritoneal hæmatocele of pregnancy operated

upon; one by abdominal section, opening the pelvic peritoneum after stitching to the parietal peritoneum, turning out the blood clots and drainage; the other by vaginal incision and packing with iodoform gauze; but the recovery in these cases to ultimate health was not more rapid than those not operated on.

CASE III.—Mrs. M., aged twenty-five. Married five years. Had not been pregnant, and considered herself very well since her marriage. Six weeks before I saw her she had missed her menstrual period, and for a few days was more or less nauseated, but that passed off and she was in her usual healthy condition. At the time of the next menstrual period she had a slight show for one day. No pain nor discomfort of any kind. Two weeks later she was seized with intense pain and shock. A physician was called in who administered stimulants and morphine. I saw her next day, and as her doctor suspected, I found intra-peritoneal rupture caused by ectopic pregnancy. She had rallied fairly well and willingly submitted to an operation. A large amount of blood was found in the pelvis and the membranes hanging in a rent in the left tube. I did not find the fœtus in this case. She made an uneventful recovery.

CASE IV.—Mrs. O. L., about thirty-five years of age. Mother of three children, youngest four years. A slight endometritis since the birth of last child. Menses regular till three months ago, when they ceased, and for eight weeks had usual signs of pregnancy. At that time was taken with a severe pain of a cutting or griping character with faintness,

but was relieved by a few doses of morphine. She noticed a marked increase in the size of the abdomen shortly after. For the next four weeks history not clearly ascertained, but at that time was taken with severe pain and intense shock. Her physician being sick, Dr. E. D. Gardner was called in to take charge of the case. The next day I saw her and found her with abdomen as large as a woman at seventh month of pregnancy, pelvis filled with a boggy mass. She was still suffering intensely with shock and almost pulseless; operation was deferred till next day, when, having rallied somewhat I operated. I found the abdomen filled with great blood clots adherent to the coils of the intestines, and with difficulty separated them. I found a fœtus of about three months among the clots in the pelvis, with a placenta almost entirely separated and incorporated, with it and almost like a part of it, three layers of blood clot of different ages. I washed into the abdomen rapidly with sterilized water, and as there was some considerable oozing from the seat of placenta, I packed with iodoform gauze, after removing the left tube which was ragged and had been the original seat of the pregnancy. It was evident that the rupture had taken place four weeks previously, and that placental attachment had taken root in the pelvis and was followed by subsequent separation. I was glad to get the patient alive off the table. She rallied slowly, but succumbed after twelve days to sepsis. This exemplifies the danger of delay in operating after first intra-peritoneal rupture.

A New Self-Retaining Perineal Retractor.

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PORTLAND, ORE.

THE first requirement in operations on the uterus is that the organ should be exposed and held in such position that it may be accessible. The perineal retractor of Sims was a great step forward, but its narrowness and length of blade and the inconvenience of the prone position have at the present time consigned it to a rather minor place as an instrument for examination.

The retractor of Simon or some of its numerous modifications, with their shorter and broader blades, have almost universally superceeded Sims' instrument in operations on the uterus. My own preference has been for that of A. Martin. It has essentially the Simon blade, with a broad outer flange, and a long, heavy handle. The perfect command of the field of operation given by this instrument, when held by skilled assistants, leaves but little to be desired.

The marked advantage of a short intra-vaginal portion is that it offers no obstruction to the ready descent of the uterus when drawn by the tenaculum forceps.

For vaginal hysterectomy, high amputation of the cervix, ligation of the uterine arteries, or any operation requiring full command of the vaginal vault, no self-retaining or purely mechanical device can ever take the place of trained assistants. In this can only that ready change of ten-

sion or position be obtained by word or sign, that facilitates so much the work of the operator.

Numerically speaking, however, operations of this class form but a small part of the work of the practitioner. It is a matter of common observation in practice that conditions requiring dilation and curettement or simple trachelorrhaphy outnumber those mentioned five to one.

Indeed, in general practice they outnumber all other operations on the female organs.

Hospital experience cannot be taken as perfectly representing private practice in this respect, and yet the most extensive reports substantiate the truth of this statement.

The second report in gynæcology from Johns Hopkins Hospital, covering a period of nearly three years, contains a table of 815 general gynæcological operations not involving cœliotomy.

On examination of the table we find that 416 operations involved the cervix or cavity of the uterus. They may be divided into three classes as follows:

1. Dilatation and curettement for stenosis, endometritis fungosa, pyophysometra and retained products of conception, 265 operations.
2. Trachelorrhaphy for lacerated cervix, 103 operations.
3. Curettement of cancerous cer-

vix and removal of polypi of cervical canal, 43 operations.

The considerable preponderance of these minor operations and the difficulty or inconvenience of always obtaining suitable assistants, and sometimes the embarrassment of their presence in private families, has made it desirable to have some purely mechanical device for exposing the uterus.

The limited field of operation has also made it possible to accomplish this with a greater or less degree of success. For these reasons a considerable number of such instruments have been devised.

Prominent among them is Emmet's self-retaining perineal retractor. The perineal portion is shorter and wider than Sims, and the point of resistance is an oval frame to rest over the dorsum of the sacrum. It was designed for use in the semi-prone position. By reason of the extremely various contour of this part, the frame does not always fit well and is liable to slip. To obviate this difficulty, the modifications of Cleveland, Hunter and Erich have shoulder straps or bands to hold them in place. These contrivances have proven awkward and cumbersome, and are consequently but little used.

The Edbohl retractor, which is held in place by a bucket of shot or other weight, would be efficient when the conditions of its use are well complied with, but it must be inconvenient in private practice.

The most recent instrument of this class, and I think the best yet presented to the profession, was devised by Dr. Samuel C. Beach, and ex-

hibited at the June meeting of the Chicago Gynæcological Society.

The retractor is an ordinary perineal retractor, but has the handle forked and turned at right-angles to the plane of the blade. The retaining mechanism consists of a flat band of metal hinged at its center for convenience in carrying. In use, this band is slipped under the body of the patient lying in the dorsal position, with the thighs flexed, thus making a fixed point of attachment for the retractor, which slips unto the inlet ring in the retaining bar and is held by a thumb-screw. The legs are held by a McBride-Packard yoke.

With the same object in view, I have devised an instrument which, unlike any other of its kind, utilizes the under surface of the pubic arch as a more convenient and uniform point for the support of the retractor.

The instrument consists of two pieces—a perineal retractor and a sub-pubic rest.

The perineal retractor has a blade like Martin's, and also a long heavy handle, but with the hook placed posteriorly at the lower part of the swell, thus affording a very firm grasp and at the same time a rest to the hand of the assistant. By examining Martin's retractor it will be seen that the hook is placed at the end of the spindle-shaped part of the handle, and is always about two inches below the firm grasp given by the large part of the handle.

To a considerable extent I am indebted to a remark by one of Martin's assistants for this improvement. It was after a long clinic, where two vaginal hysterectomies and several

minor operations had been preformed, that I tarried to speak with the assistant, who referred to that feature of the otherwise perfect instrument as, "Nicht bequem fur ein assistent."

The perineal part may be used alone to be held by an assistant in major operations on the uterus, and possesses all the merits of Martin's, with the addition of a better grip on the handle.

The heavy handle has been objected to by some who have examined, but not tried the instrument. This is one of the decided advantages. It gives the assistant an easier command of the perineum, not only for its retraction, but with the instrument I have devised for its shortening

by upward pressure as well, when occasion requires it.

The distinctive feature of my instrument is the sub-pubic rest, from which retraction is maintained.

The blade is short, well curved on the top to fit the under side of the pubic arch, and corrugated near the tip to prevent slipping. It is attached to the perineal portion by a notched bar sliding in hooks on the side of the blade, the compression of the parts locking it firmly in position without intervention of screws.

It is easily adjustable, and may be placed or detached without removing perineal portion. This piece has been cast from phosphor bronze to give it greater strength.



In use the perineal portion would be first inserted and well retracted, and then the sub-pubic rest introduced and pushed to place. If the directions of this sentence are carefully followed there can be no difficulty in its use. The perineum should be retracted by a strong pull on the handle and but little upward pressure will be required on the sub-pubic rest. In fat women the thickness of the external parts makes it necessary to push the upper part of the instrument well in between the labia, in order that the curve of the short blade may

rest under the pubic bone. By the observance of these precautions there will be no slipping, and the command of the field of operation is almost as great as that obtained by manual traction by good assistants, and surely superior to timid make-shifts that must sometimes be resorted to in emergency. The blades being short, the cervix is not always exposed at once. The vaginal fold should then be pushed aside with the finger and the cervix seized with the tenaculum forceps and drawn down.

In connection with operations of

this kind, I desire to refer to two adjuncts, viz., leg holders and tenaculum forceps.

A most convenient and efficient leg holder may be made from a strip of muslin half a yard wide and two yards long, with slits near the centre through which the arms and shoulders are passed. The thighs are then fixed and the bandage placed around the knee and fastened with a large safety pin.

The heavy American bullet forceps, with lock, has proved not only the best instrument for holding down the uterus, but a superior tenaculum and tissue forceps in many general gynecological operations as well. The operator should be provided with three or four pairs of these forceps.

In the year that has elapsed since my instrument was devised I have used it in many operations on the cervix of the uterus and the require-



ments have been admirably met. It was constructed for me by Chas. Truax, Greene & Co. of Chicago.

April 28, 1895.

SOCIETY PROCEEDINGS.

Transactions of the Detroit Gynæcological Society, Regular Meeting,
May 1, 1895.

DISCUSSION—INTRA-PERITONEAL ADHESIONS.

THE President, E. T. TAPPEY, M. D., in the chair.

Dr. TAPPEY.—Dr. Riedl, of Jena, has been doing a lot of work in this direction, and he devotes a long paper to the topic. He finds that chronic indigestions and dyspepsias are often caused by adhesions in the peritoneal cavity and that the symptoms are often relieved by freeing these adhesions. We all have come across intra-peritoneal adhesions of one sort or another in doing laparotomies, and it struck me it would be an interesting topic for discussion.

Dr. JENKS.—I have not given the subject any particular attention and I have not seen the paper Dr. Tappey refers to, but I have encountered intra-peritoneal adhesions ever since I began to make abdominal sections. I have no doubt that adhesions of the abdominal organs might give rise to intestinal dyspepsias and indigestions, the functions being interfered with, and yet, on the other hand, the thought comes to my mind of cases I saw many years ago, when I had the opportunity of making post-mortem examinations, where operations had previously been done for the removals of small tumors and growths, and I have seen the intestines matted together so that it would seem almost impossible for peristaltic action to go on, and yet the patient would be tolerably comfortable. I recall one case in particular where the patient lived many years after ovari-

omy, which was followed by a severe peritonitis, and, though the intestines were matted together, the patient was fairly comfortable and died of another disease. While that is true, we look upon these as exceptions; as a rule, undoubtedly adhesions interfere with the functions. Adhesions in the pelvic organs which follow slight inflammations produce many reflex symptoms, and pain is often a consequence. Take, for instance, a case due to exposure to cold, where there has been a catarrhal salpingitis and the organs are matted together and the uterus is adherent to the ovary, we have pain in consequence. In many of these cases, treatment by pessaries and the various modes of routine treatment fail to do any good, and in such cases time is wasted if we continue the routine treatment too long. We should make an exploratory operation and restore the uterus to its normal position and relieve the patient of pain. Now, on the other hand, I would never advise a surgical operation unless I thought the patient was going to be benefitted. I think there are adhesions that may be cured by the routine treatment, but these cases are limited. I should not continue the treatment for any great length of time. Our friends belonging to a specialty within a specialty claim to make cures by the application of galvanism, and possibly they do, but I never found

anyone who faithfully followed Apostoli's method as successfully as he claims to.

Dr. MANTON. — I hardly know what to say, because in considering such a subject we open up the discussion of the pathology of all the abdominal and pelvic viscera. The peritonæum is a very curious membrane, and although our knowledge of its physiology and pathology has advanced in the last few years, it is still very imperfect. To a clear understanding of the peritonæum we ought to go back to embryology, when the body cavity is formed. Under ordinary circumstances, we know that the secretion which exudes from the peritonæum is sufficient to keep this surface moist and prevent friction. A very little disturbance, however, will sometimes produce serious results and give rise to the formation of adhesions between peritoneal surfaces, while in other cases, seemingly worse, we get no adhesions at all; so that until the reason for this and many other points are cleared up, our knowledge of the peritonæum will remain imperfect. I have no doubt that in a large number of cases the nervous system plays an important part. In insane people we often find after death that the peritoneal cavity is bathed in pus, sometimes large quantities being evacuated at the autopsy, and yet during life there was no indications of it, either as regards pain or other physical symptoms. Ordinarily, the presence of pus in the peritoneal cavity produces very serious disturbance, and if not followed by death is certainly followed by adhesions. It is curious, too, that very slight adhesions in certain instances will produce serious results, whereas, as in the case referred to by Dr. Jenks, enormous adhesions may be present for years without manifesting their presence. I remember once seeing a man die in a very few hours as the

result of a very small band, not larger than a fine knitting needle, that crossed the intestines, and which caused no symptoms until shortly before death. Of course, when we speak of adhesions we mean the effects of some antecedent cause which will always be found in disease of one or the other of the pelvic or abdominal viscera, for in practically every case the trouble lies, not in the peritonæum, but in one of the other organs of the body. In the pelvis the effect of adhesions may be reflex phenomena displayed in nearly all the organs of the body, and the local condition may occasionally be subordinate to these. Of course, we all know what results we may get from adhesions following abdominal section; the pain from the imperfectly covered stump, or the adhesion of that stump to one of the neighboring organs may produce a great deal of suffering and annoyance to the patient. I met a very peculiar case recently, which puzzled me not a little until I opened the abdomen. The patient, from whom I removed a large ovarian tumor a year ago last February, began to vomit in the morning. She thought she was pregnant, but a careful examination showed that the lumen of the intestine was almost occluded by adhesions cutting off a portion about six inches in length. The patient's condition progressed from better to worse, and finally, about a month ago, she began to vomit persistently and had several attacks of general cramps. I had her sent to Harper Hospital, and tried to build her up for a few days, and then operated. Upon opening the abdominal cavity, expecting to find adhesions, I found instead that a part of the intestine was shut off by bands in the intestinal wall itself, so that the involved portion looked like a bologna sausage. These constrictions were not adhesion bands, but cicatrices.

For several feet there were in the wall, at irregular intervals, large nodules, and, from some of these cicatricial threads were extending up into the intestinal wall. In speaking to Dr. Heneage Gibbs of this patient, he said that the condition was undoubtedly adeno-sarcoma, a very rare disorder at this point. In a case like this, diagnosis is absolutely impossible before operation. Attention was first directed to pelvic adhesion by the studies of Bernitz and Goupil. They pointed out that so-called cellulitis was nothing more or less than pelvic peritonitis followed by exudation and the subsequent formation of adhesions. Regarding the treatment of these conditions, I should hardly agree in toto with Dr. Jenks. I think, in a large number of cases in which the condition is not due to a pyosalpinx, the adhesions may be broken up and the organs liberated by persistent and careful local applications and sometimes by the assistance of electricity. I have recently operated on a cervix case, in which, when the patient first came to me, the uterus was bound down in all directions; but, as the result of careful treatment, the adhesions have entirely disappeared, and the uterus is in good position. There are no adhesions left, but there is still a thick cicatricial band on the right side of the vagina. I have seen many cases where these adhesions by persistent treatment could be broken up, and others where they could be sufficiently stretched to allow the uterus to be put in a proper position, so that a pessary could be tolerated and the woman kept in a comfortable condition. While I would never hesitate to open the abdominal cavity where such procedure seemed desirable or necessary, I do believe that so-called exploratory operations are made too frequently, and are often without benefit to the patient. I notice that a committee, which has recently been

investigating the Chelsea hospital for women in London, England, have brought in a decision against these frequent operations. Instead of abdominal surgery being the acme of professional skill, I believe that the physician who can relieve his patients without operation is entitled to greater credit than the man who operates without particular reference to the condition present. I am glad to see that Dr. Skene has published a book on medical gynæcology, which I hope will have some retarding effect on this abuse of surgical work.

Dr. CARSTENS.—Really I must say I did not know exactly what I was to discuss, as the field is so wide. There are adhesions caused by blows, injuries, etc., which cause inflammation of the various organs and especially to the intestines, and as a result, (as in all other cicatricial conditions,) a gradual contraction takes place, and there is an obstruction of the bowels, or an ureter, or the ducts, and they cause trouble and have to be relieved. It is perfectly wonderful how sometimes these adhesions will disappear in the course of time. We have all, more or less, had cases that require perhaps two abdominal operations, and where in the first we find extensive adhesions and trouble in the way of obstructions, in the second we find all have disappeared. Nature is very kind indeed. While in other cases little bands will remain in spite of all treatment. Thus we have adhesions resulting from inflammations along the gall ducts and round the cæcum, and those produced as a result of disease of the tubes. Those around the cæcum cause very little trouble when the acute symptoms have subsided. The adhesions resulting from inflammation of the tube extending into the abdominal cavity, for instance, following a badly managed miscarriage, are generally extensive and firm and do not generally yield to treatment. There are

cases where you have displacement of the tubes and everything is bound down, where by the use of massage and electricity and tampons and painting with iodine, a great deal of benefit will be obtained, and the patient made quite comfortable, but in my experience they do not get entirely well, and even if the adhesions are broken up (as by the Schultz method), and the uterus kept in place with a pessary, they will recur, and ultimately will give as much trouble as before, so that I, for one, am now very cautious about breaking up these adhesions, especially if the patient gives any history of previous pelvic inflammation. I believe with Dr. Manton that many cases can be made very comfortable, but I do not believe that they can be cured, and in the vast majority of cases where the adhesions are extensive and the patient suffers excruciating pain every month, nothing will help her but an abdominal operation and getting the uterus into the normal position. In the main I agree with my friend Dr. Manton, but I cannot agree with the view he takes of exploratory section. I hold that these cases demand exploratory operation; I never did one without finding something. Sometimes patients are disappointed if they are not operated on, but they should be judged and diagnosed carefully. I get a little tired of hearing fossils in the profession going back on what they did formerly. They were once on the top, but when some of the younger men came there, and in spite of all the objections and abuse, put abdominal surgery where it is today, these men in their dotage come and talk about conservative gynecology. This makes me tired, and I may be tempted some day to talk very strong about the mossbacks.

Dr. MULHERON.—I labor under the disadvantage of not having heard the remarks of the gentlemen who

preceded me. I have, however, very freshly on hand just now a very striking case in which every effort known to "conservatism," was employed, including the massage treatment, all of which failed to break up adhesions. I first saw the woman about a year ago, during an attack which was very like acute mania, occurring during menstruation. After the menses ceased I examined her and found the ovaries firmly bound down on both sides. I practised massage for quite a length of time, and finally gave it as my opinion that abdominal section should be done. This was not agreed to, and she passed into the care of several other physicians who, as far as I have been able to learn, practised similar treatment to mine, without benefit. At each treatment she became perfectly maniacal and I was called to see her again. I advised her to go to the hospital, and today I operated. She gives a history of violent pelvic inflammation following a miscarriage. I found very extensive adhesions, and the ovaries bound down by masses of cicatricial tissue. The case was a difficult one as the woman was very adipose. I had to cut through three inches of abdominal fat. I succeeded, however, in breaking up the adhesions and removing the ovaries and tubes on both sides. The result, so far, has been very satisfactory; the patient is tonight perfectly calm and in possession of her right mind. I have very little faith in medicinal treatment for breaking up adhesions. They tend to go on contracting indefinitely, and I think with our aseptic and antiseptic precautions it is quite justifiable to open the abdominal cavity and break them up. Fools may now with impunity rush into this cavity, where a few years ago angels feared to tread.

Dr. SPRAGUE.—I agree in the main with what has been said, but I have a thought, especially in reference

to Dr. Jenks' remarks — that there might be much more done than simply packing the womb and painting with iodine. I believe that a combination of electricity and massage will do a great deal towards breaking up adhesions. The steady bimanual and external manipulations as practised by Brandt, and the application of electricity, will do far more than packing with tampons and painting with iodine; but I would like to lay particular stress on the use of massage in the early history of these cases; more can be done then than when they become chronic. The adhesions consist of an organization of lymph, and at first this lymph is very easily disturbed, and if it is frequently disturbed the adhesions will not form. I would not by any means advocate that every case can be cured by this treatment, but the majority of cases should have a trial before resort is had to operation; perhaps not at the hands of those men who are so thoroughly skilled and accustomed to the use of the knife, but there are a great many patients who cannot come into the hands of these men, and those less skilled can do much with the massage treatment. It has been said that the massage treatment is a nasty treatment, but it seems to me that that is a mere prejudice, and the feeling has been just as strong with regard to women putting themselves into the hands of men for treatment at all. I think it can be done in a way that will do the patient much good, and I have more faith in it than in electricity even.

Dr. LONGYEAH. — This question of conservatism that has been talked of so fiercely here by one or two, it seems to me, is a question that depends very much on individual operators. What would be conservative for one man would not be for another. What might be a gross piece of malpractice with one operator might be conserva-

tism with another. Just so in the treatment of adhesions by other than surgical means, with an operator who has the necessary skill and patience, and the patient's condition not complicated by pus tubes, the chances are that the patient will receive much benefit. Whether these cases will be cured entirely or not is a question I cannot answer; but I know from experience they can be made comfortable. Neither is every case operated on cured; a great many are not. If it could be correctly computed, probably 50 or 60 per cent. are cured, and a fair per cent. of the balance benefited; but a considerable proportion will be no better or worse than before operation. I believe that skillful treatment, as by tampons, painting the vault of the vagina with iodine, careful manipulations, stretching the adhesions, and the skillful use of electricity — though the patient must understand that the treatment must be more or less tedious — will enable a great many of these patients to enjoy life. I think perhaps Dr. Manton's strictures on opening the abdomen are a little too severe, yet I think myself that many operations are unnecessary. When, however, you have certain grave abdominal symptoms that you cannot diagnose, I think an exploratory operation is warranted.

Speaking of adhesion due to chronic interstitial salpingitis, I have recently had experience with a case of that kind. A young married woman, with one child, had a miscarriage, and when I saw her was having fever due to infection. I found the uterus firmly adherent, almost completely retroverted, so that the fundus lay against the rectum. It was impossible to move it, and it was with difficulty that I removed the source of the infection, which was a small piece of decomposing membrane. She made a fair recovery. After that I treated her for nearly a year, using

tampons with ichthyol, electricity, and various internal medicines. The adhesions were sufficiently broken up, so that I could easily turn the uterus into anteversion, but it never recovered from the retroflexion, and the ovaries and tubes were adherent to it. She asked if pregnancy would help her and I told her I thought it would, but doubted if she could go through it. She became pregnant, and for three months I was there nearly every day, endeavoring to keep the uterus up and prevent the enlarging organ from becoming wedged in the hollow of the pelvis in its retrodiplocal position. Several times abortion seemed imminent, but at last, toward the middle of the third month, the organ ascended above the local promontory, and after a few days of distress she settled down to a normal condition of pregnancy.

Dr. TAPPEY.—I have noticed that most of the remarks have referred to adhesions in the pelvic cavity. In suggesting the topic, I had in mind as well, adhesions in other parts of the peritoneal cavity, and I had particularly in mind adhesions of the intestines to ovaries and abdominal organs, and the writer of the paper already referred to speaks of a great many such cases where intestinal indigestion and colic have been caused by comparatively slight adhesions of the intestines to each other and to abdominal organs. Dr. Manton referred to a case I operated on recently, it was a case that followed a laparotomy. The patient had a constant very severe pain in the left ovarian region, and was troubled for a long time with a very severe cystitis. I happened to read an article which related to a case of cystitis, caused by the emigration of the colon bacillus into the bladder, and it struck me it might be a possible explanation of this case, and suggested that very likely there was an adhesion between the colon and the bladder. After

suffering for some two years she decided on operation. I found the adhesion of the colon to the bladder, and also a firm adhesion of the colon to the stump of the left broad ligament. These adhesions were broken up and the injury to the intestines repaired, and the pain was relieved entirely for a week, but she subsequently died from peritonitis and perforation of the intestines.

In another case the symptoms were those of gall stone. There were periodical attacks of severe pain in the region of the liver extending to the umbilicus, lasting several hours, sometimes several days, accompanied by jaundice, clay-colored stools. I operated, expecting to find gall stones in the gall bladder or duct, but I did not. I found extensive and firm adhesion binding down the stomach and duodenum in such a way as to occlude the common duct. I broke up these adhesions and the patient has remained well since then, a period now of three years.

Dr. JENKS.—I want to say that I agree with everything that has been said. You put upon me the duty of opening the discussion, consequently having given it no previous thought, I might have said more than I wanted to, or not as much. I want to have a clear understanding as to what conservation means. I claim to be a conservative, though the word, as used, is a misnomer. It is used to speak of timidity and ignorance, while it really means to persevere health. Dr. Manton has put me in a position I do not occupy. He made me anti-conservative. Now I want to say I agree with what has been said concerning treatment, but we seldom get good results from it, and I maintain that where the adhesions are old and the uterus is bound down and we cannot straighten it, it is true conservation to make an exploratory operation. I think what Dr. Carstens said in regard to men decrying

what they formerly advocated is true, and yet when a man finds he is in error he should not be afraid to say so. I most emphatically disapprove

of the violent method of Schultz to restore the uterus and break up the adhesions.

The Meeting of the American Medical Association at Baltimore.

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THE forty-sixth annual meeting of the American Medical Association was held at Baltimore during the second week of May. It was largely attended and was very successful. Physicians from all parts of the country were present and took the greatest possible interest in the papers which were read. The amount of work done at the meeting may be inferred, when it is said that there were in all 394 papers read. On the practice of medicine there were 58; surgery and anatomy had 37; obstetrics and diseases of women, 29; ophthalmology, 50; the rest were divided among the remaining branches. To one who had never before attended a large meeting of the kind the advantages of being present were manifest. Every topic of interest was thoroughly discussed; every mooted point brought out; various methods of operating presented; and, in fact, it seemed as though the entire science of medicine, up to the present time, was reviewed and brought out for inspection and criticism. The discussions were interesting and at times animated. There were enough papers on each branch to keep one busy all the time, so that one had all he could do to attend to his special section. Gynecology received its full share of attention. It appeared as though the meetings were rather better attended than those of other sections. It was

noteworthy that electricity received but scant courtesy. Everybody had apparently tried it and was disappointed in the results. It was not universally condemned by any means, for there was no opposition made when Baldy of Philadelphia said that as a palliative in certain cases of uterine fibroid it had no equal. That this is so, there can be no possible doubt in the minds of those who have applied it as Apostoli directs. What is to be done, for instance, in the case of a woman who has cardiac or renal disease which absolutely contra-indicates operative measures? Shall she be allowed to die of her bleeding fibroid? Those who have had these cases, and have treated them properly by electricity, have nothing to say but words of praise in behalf of a method which relieves without pain and whose results are sure. A woman who does not wish to risk her life by submitting to an operation for removal of her fibroid — and that it is a risk no one will deny — will accept a palliative treatment which will at least make her comfortable. It is better to be alive with a fibroid which causes little inconvenience than to die from the effects of an operation which is destined to cure.

Hysterectomy for fibroids was a subject which received a great deal of attention. Among those who read on the subject were: Eastman, Price,

Senn, Baer, Baldy and Smith. Abdominal hysterectomy was advocated almost exclusively. The French methods of vaginal hysterectomy are as yet unknown to any great extent in this country. Whether they will eventually become popular is perhaps as yet uncertain. For the present, that it can be done, that it has been done, and that the mortality is lower than by the abdominal route (1.7 per cent. in 400 cases) seem certainly to be facts which furnish food for reflection.

In abdominal hysterectomy there was a consensus of opinion that the quickest way was the best way. Therefore the method of leaving the cervix behind and simply amputating the tumor after tying the ovarian and uterine arteries seemed to be the favorite. In the discussion in regard to the possible prolapse of the stump of the cervix, it was brought out by those who had experience in these operations that it did not happen. An objection was raised that the operation was unclean on account of possible infection from the contents of the cervical canal. But this was also denied. The method of closing over the pelvic contents, by stitching the incised edges of the peritoneum in front and behind, was the common practice.

Howard A. Kelley of Baltimore had an operation of his own, which he presented. For rapidity, for neatness, and for the ease with which it can be done, Kelly claims it has no equal. He performed the operation before a large audience of the members of the association at the Johns Hopkins hospital. From the time he made the abdominal incision until the time when the tumor was rolled out, it was exactly five minutes. It seemed so easy to do that it appeared as if it were perfectly possible for anyone to imitate him. It is related that a certain physician from one of the large cities of the East went

down to Baltimore to see Kelly operate. Among other things, he was most favorably impressed with his hysterectomy work. It seemed so easy, so simple, that he felt sure he could do it also. He went home and tried it, much to his discomfiture; the patient nearly died on the operating table from hæmorrhage. Kelly's method is as follows: In brief, the left broad ligament is first tied off, the tumor is amputated, and finally the right broad ligament is tied off. The details are apparently simple. After making the incision—and he favors a large enough one—he ties off his left ovary and tube, cuts down the broad ligament, feels for the uterine artery with his fingers, ties this off, using a stout, curved, blunt needle. He then incises the peritoneum anteriorly, somewhat above the cervix and well on to the tumor, from side to side. He then separates the peritoneum from the tumor proper, using the finger at first and then a sponge mounted on a sweep, shoving the latter well down into the pelvis so as to completely separate the bladder. The next step is cutting through the cervix, which he does with a stout knife curved on the flat. The tumor is everted laterally to the right. It is now an easy matter to clamp the right uterine artery with a curved clamp, to cut through the ligament, and finish the amputation by clamping the ovary and tube. Ligatures are now applied to the right side, and the operation finished by passing a few stitches through the cervix antero-posteriorly, closing the canal and sewing the anterior peritoneum to the posterior. No drainage is required. Baldy cautioned the members in regard to this operation, and said it was not as easy as it looked. Hæmorrhage is to be feared. The ureters, however, are protected, because the uterine artery is felt with the fingers before it is tied off. Should the operator have

any fear on this score it may be allayed by passing a catheter into each of the ureters before opening the abdomen. The operation of hysterectomy by Kelly's method is attended with but slight mortality. He has had something like thirty-five cases with no deaths. This included tumors of all sizes, large and small. There is not much doubt but that this favorable showing is due in a great measure to the rapidity with which he works. The fact that prolonged anæsthesia increases shock has not been sufficiently emphasized. That it does so is certain. Given an operator who works quickly and keeps his patient as short a time as possible under ether, and his results will inevitably be better than those of a slow surgeon—other things being equal.

The question of ligation of the arteries as treatment for fibroids without removal, was presented by Bryon Robinson of Chicago. In the discussion it was brought out that the method succeeded at times, but that it was uncertain in its results.

The next subject presented was that of hysterectomy for pelvic suppuration. Baldy, of Philadelphia, read the first paper. He favored total extirpation of the uterus and appendages in all cases of pelvic suppuration, and presented 235 cases collected from the results of six operators. The mortality was 2.7 per cent., or thereabouts. His reasons for removing the uterus were: that it was a reservoir of reinfection; that it was a useless organ after the appendages were removed; and that it was the source of leucorrheal discharges at times after an incomplete operation. To sum up, he argued that after simple removal of tubes and ovaries for pelvic suppuration, the woman was by no means relieved of her pains and distress, and that frequently she was quite as badly off as before the operation. Baldy

always operated by the abdominal route, and condemned the vaginal route as unsurgical, unscientific, blind, and illogical. The two papers which followed were by Stone, of Washington, and Garceau, of Boston. They favored the vaginal route for many reasons. In the first place it is not unsurgical because it has been done and is being done today by the most skillful surgeons of France. The chief objection to the operation in this country appeared to be that the technique was not thoroughly understood and was not appreciated. It is something unique in surgery and has no parallel. Removal of a uterus which is firmly imbedded in dense adhesions is a perfectly feasible thing. By following the rules laid down by Péan and his followers, it is possible to overcome the greatest difficulties. Morcellation is the process used; that is, removal of the organ piecemeal, not in a haphazard way, but by following definite rules. In answer to the objection raised that it is a blind operation, it may be said that the first rule of the operation is never to work in the dark. You must see what you are doing at every step. By using the Péan retractors the bladder and rectum are not injured, nor are the ureters. As to the advantages claimed, they are many. In the first instance, the keynote of the procedure may be said to be drainage—good, free, unobstructed, surgical drainage. The uterus is removed; the abscesses discharge into the vagina; and the pelvic contents contract down *en masse* just as an abscess would in any other part of the body—an abscess associated with appendicitis, for instance. This contraction is of special importance in cases of suppuration complicated by vesical or intestinal fistulæ. The peritoneum is not soiled; the discharges flow down and out, and the natural healing is aided by the

contraction of the pelvis contents *en masse*. In regard to the statistics, they compare favorably with Baldy's. Jacobs had 113 cases of double purulent collections for which he did vaginal hysterectomy. His mortality was 1.8 per cent. On following his patients for four years he found that the vast majority were permanently cured; all were relieved. Such is not the case after celiotomies for pelvic suppuration when the uterus is not removed. Vaginal hysterectomy is particularly indicated in cases in which there are dense adhesions and large abscesses, conditions in which celiotomy is dangerous. The shock is comparatively insignificant. It was admitted by Baldy that he did not treat these severe cases by abdominal hysterectomy. He drained them through the vagina. He did not state how many ventral hernias he had, a condition which does not follow vaginal hysterectomy. It is not claimed that vaginal hysterectomy for pelvic suppuration is an inevitable cure, and that in the hands of inexperienced men it might not prove unsatisfactory; but it seemed from the wonderful results obtained in France that it was destined in a great measure to replace celiotomy. Other conditions than pelvic suppuration can be treated vaginally. If it can be proved, for instance, that an ovary which is cystic or affected with incurable disease can be removed through the vagina with perfect safety, avoiding thereby a ventral scar with its dangerous possibilities, it is quite probable that there will be more vaginal work and fewer celiotomies. Polk of New York, treats his cases of extra-uterine pregnancy through the vagina. His method is to incise the vagina in the posterior fornix, pass in his finger, hook it over the broad ligament of the affected side, and to control hæmorrhage by piercing the middle of the broad ligament with one jaw

of the forceps, so as to include the ovarian artery when both jaws are closed. Hæmorrhage being controlled it is an easy matter to turn out the clots, wash out, and drain with a bit of gauze. The forceps on the ovarian artery is removed in 48 hours.

Hysterectomy for puerperal infection had two exponents: Paterson of Grand Rapids and Noble of Philadelphia. They both contended that a uterus in the puerperal septic state was a *nidus* of germs. Such a uterus is infiltrated with pus. It is dangerous to the system, as these germs occasionally, in spite of repeated curettings and washings, give rise to a general septicæmia, which finally kills the woman. In both such critical cases when milder treatment fails the uterus is to be removed. The mortality is great, but the case is desperate. Some successes were reported. The decision as to when to operate would be arrived at promptly if it were possible to determine accurately just when the disease was about to become general; in other words, just before the time when the germs were about to invade the general system. If this could be determined, operation would be imperative. Bacteriological research must decide this. Investigations now in progress would seem to indicate that in the future this will be possible. In the discussion which followed, the method was not supported by many. Palliative measures were preferred, in view of the tremendous operative mortality, and also from the fact that sometimes the most desperate cases get well.

The conservative treatment of the uterine appendages was a subject that was attentively listened to and duly appreciated. Augustin H. Goelet of New York was the chief exponent. That in the past too many ovaries have been needlessly sacrificed is undeniable. The same is probably true at the present

time. We have not yet reached that stage of fine diagnosis when we can say with infallibility: these ovaries shall be removed, these ovaries shall remain. Many women are made infinitely worse by these operations, particularly those whose nervous systems are wrecked by years of suffering. In these cases it is not the gynæcologist, but rather the neurologist who can do the most good. To subject such a patient to an operation is ill-advised and generally results disastrously.

Another class of cases is that in which the appendages are but slightly diseased. The woman may suffer a good deal, but because this is so, is no reason why she should be unsexed, and put in the rapidly increasing class of unfortunate sisters, who live apart from the rest of society, suffering without complaint, but who nevertheless keenly feel the stigma which they are obliged to bear in silence. Palliative treatment will do these patients a great deal of good. If operation is imperative, every effort should be made to leave at least a portion of the ovary that the catamenia may continue, and that there may be a prospect of future pregnancy. It is far better to do a partial operation which may be completed at a later date, than to remove every vestige. The ovaries can never be replaced; a secondary operation is always possible if required. The younger the woman, the more careful should we be about deciding to remove the ovaries. Cases have been reported in which after total ovariectomy a rapid involution of the uterus and vagina took place. In the case of married people this is a factor which must not be overlooked.

Extra-uterine pregnancy was dismissed in a short time. The universal opinion was that the sac should be removed as soon as the diagnosis was made.

Perhaps the most interesting fea-

ture of the meeting was the demonstration of Kelly's studies on the bladder and ureters. By means of his specially devised instruments, diseases are now diagnosed with ease and certainty which were formerly ascribed to the vague action of the reflexes. The method is briefly this: The woman is put in the knee-chest position. Ether is not required, save in the case of a very nervous woman or when there is great sensitiveness. Cocaine ten per cent is applied to the meatus for five minutes. The meatus is then rapidly dilated with a conical dilator. With a quick motion the speculum is now introduced into the bladder. Light is reflected by a head mirror into the speculum and all parts of the bladder are inspected with ease. Diseases are thus diagnosed by sight. Small stones can be removed as well as foreign bodies. Local applications can be made to diseased areas. But perhaps more important than this is the application of the method to the study of the kidney itself. The ureters can be catheterized with fine catheters, and the urine from each kidney collected and examined separately. This is of vital importance, for it tells with absolute certainty which kidney demands extirpation in cases of disease. The amount of urine secreted by each can be determined accurately. If no urine flows from the catheter the kidney is absent, or there is an obstruction which prevents the urine from flowing into the bladder, possibly due to gonorrhœal stricture of the ureter (case reported) or to calculus. More than this, purulent pyelitis can be treated locally by passing in a catheter up to the pelvis of the kidney, and washing it out with bichloride solution (1-150,000 to 1-16,000). Such a case was reported by Kelly. It was a woman with a gonorrhœal history.*

* See bulletin of the Johns Hopkins Hospital, February, 1895.

"The left ureter was catheterized and the catheter encountered an obstruction. After repeated efforts it passed it, when at once a great quantity of urine escaped—130 c. cm. in three minutes. The fact that so much urine escaped in so short a time proved conclusively that the case was one of extreme dilatation of the left urinary channels above the stricture, for the normal rate of secretion is but one cubic centimetre a minute for both ureters together, or one and one-half in three minutes for one ureter. The discharge of 130 c. cm., would be twenty-nine times the normal amount, or at the rate of about twenty-two gallons a day for both sides together, thus by a *reductio ad absurdum* proving that the case was a dilated pyoureter and pyelitis."

This woman was cured of her pyelitis. The pus cells, leucocytes and gonococci disappeared from the urine completely. The ureter was gradually dilated, but there was difficulty in keeping it dilated enough to allow the urine to flow down unobstructedly.

Hitherto abdominal as well as vaginal hysterectomies have been done with great danger to the patient, on account of a possible wound of the ureter during the operation. Cases have been reported in which the ureter was cut. There is now no excuse for this accident. Kelly demonstrated this in the operating room. The woman had cancer of the cervix. Having been etherized she was put in the knee-chest position. Rapid dilatation, insertion of the speculum, and finding the ureteral orifice, was performed in a few minutes. A catheter was then inserted into each ureter up to the pelvis of the kidney and allowed to remain there during the operation. Inserting these catheters did not take more than three minutes. The abdomen was then opened and the location of the ureters determined by the *touch*. During the whole operation they were under perfect control and at no time in danger of being wounded. At the end of the hysterectomy they were removed.

Mississippi Valley Medical Association.

THE twenty-first annual meeting of the Mississippi Valley Medical Association will occur in Detroit, Mich., Sept. 3, 4, 5 and 6, 1895. This Association is now in a more prosperous condition than ever before. The membership list shows a large increase annually, and the character of the scientific work accomplished at each meeting is of the very highest. The officers and committee of ar-

rangements are working unceasingly for the success of the Detroit meeting, and, although early, indications are that a meeting of unusual size and interest will be held in September. The profession of Detroit are united in their efforts to have the gathering in their city outshine all previous ones. The social features of the meeting will leave nothing to be desired in that direction.

REVIEW OF GYNÆCOLOGY.

THE MANAGEMENT OF LABOR COMPLICATED BY HEART DISEASE.

Barton Cook Hirst takes occasion to say, in the *American Journal of Obstetrics*, March, 1895, that the mortality, of some writers, of women in labor who are at the same time the subjects of organic heart disease, does not correspond with that of his own experience, it being entirely too high, and he lays his success entirely to his method of treatment, believing that his cases have been as serious as those of other men.

He instances as proof one woman with valvular disease (both insufficiency and stenosis of the left auriculo-ventricular orifice) who sat bolt upright in bed, day and night, for weeks before delivery, with labored breathing and face as blue as indigo; another with congenital heart disease of both mitral and tricuspid valves, a primipara at the age of forty-four, with advanced kidney disease to boot; a third with disease of the aortic orifice and an enormous aneurism of the arch of the aorta; a fourth with mitral disease of long standing, albuminuria, profound anæmia and an exceedingly rapid, weak pulse; and a number of other cases not so striking, of which he has unfortunately preserved no exact record.

In addition to the care every pregnant woman should have in the matter of diet, regulation of the bowels, exposure to cold and limitation of exercise, etc., he exhibits to those with heart disease iron and strychnia and one of the heart tonics, digitalis or strophanthus, in larger doses than would be used were she not pregnant.

The urine receives closer attention, and he terminates pregnancy prematurely, securing thereby an easy labor

and avoiding the strain upon the heart that increases with every day in the last month of gestation.

When labor begins, digitalis and strychnia are administered in large doses hypodermatically until the os is the size of a dollar; then, in head-first labors, forceps are applied and the child extracted as rapidly as possible, without regard to the integrity of the maternal tissues and without anæsthesia.

In some cases he has incised the cervix to facilitate delivery.

This he does to shorten labor and save the woman all the fatigue of voluntary muscular effort in the second stage and to insure hæmorrhage from the lacerations, which he thinks the best safeguard against engorgement of the lungs and overstrain of the heart after child-birth.

Nitroglycerine and nitrite of amyl he keeps within easy reach in case of emergency.

A CASE OF CONCEALED ACCIDENTAL HÆMORRHAGE DURING THE FIRST STAGE OF LABOR, WITH RECOVERY OF MOTHER UNDER CONSERVATIVE TREATMENT. By EDWARD REYNOLDS, M. D.

On the 31st of last December I was asked to see a primipara of thirty-eight, who had been subject to asthma and in poor health for some time, but had been in unusually good condition throughout her pregnancy. Labor began in the evening of December 29; a few hours later Dr. Murphy was called, and found the cervix extremely long and rigid, the external os patulous, and the internal os about the size of a ten-cent piece; a little later in the evening the pulse

rose suddenly to 160, and the patient felt faint, but as she gradually rallied somewhat, no treatment was adopted. During the night of the 29th and the day and night of the 30th moderate labor continued, and the pulse decreased gradually in rapidity. During the day-time of December 30th the patient became jaundiced, and began to look highly cachectic.

When I saw her at 10 A. M., December 31, the pulse was 110, the skin was extremely sallow, the conjunctivæ slightly yellow. The patient was feeble and apathetic; the cachexia was marked, and her appearance resembled that of advanced malignant disease. The appearance of the abdomen was very peculiar. The uterus was rather small and extremely prominent, the epigastrium sinking rapidly away behind the fundus. On palpation, the fundus was tonically firm and rounded, suggesting the presence of unbroken membranes. The head presented. There was a tonic contraction of considerable intensity, accompanied by feeble exacerbations. On vaginal examination, the external os was soft and thin, about half dilated, and hanging away from the head; while the internal os, slightly larger, was hard and rigid, and pressed firmly against the head. The fœtus was moderately macerated, and a portion of its scalp, filled with fluid, occupied the cervical canal. Under ether, Dr. Murphy easily extracted a six-pound child by forceps. With the first attempt at

expression the placenta was forcibly expelled, and was followed by about a quart of dark, old-looking clot.

The patient rallied well from the ether, and subsequently made a rapid convalescence.

Though forceps are not strictly applicable to much macerated heads, they were used here, on the ground of my belief that the extraction would be easy, and that the head was sufficiently firm to offer a secure grasp, a belief which was justified by the result. I think it probable that the blood was extravasated behind the placenta on the evening of the 29th, at the time of the sudden rise of pulse. The fœtal heart had not been listened for at that time, and it is impossible, of course, to state that the death of the child was due to the hæmorrhage and the consequent detachment of the placenta; but as the mother had felt active movements shortly before that time, and as some previous experiences lead me to believe that maceration may become well advanced in a period of forty-eight hours in utero after the death of the child, I am inclined to believe that the hæmorrhage was the cause of the fœtal death in this case. It is an interesting question whether the apparent jaundice could be hæmato-poietic and due to the hæmorrhage. The case is, at all events, well worthy of record from its extreme rarity.—(*Boston Medical and Surgical Journal*, 1894).

BOOK REVIEWS.

(All Exchanges and Books for Review should be sent to Dr. C. G. CUMSTON, 826 Beacon St., Boston.)

KLINIK DER GEBURTSHUELFICHEN OPERATIONEN. By HEINRICH FRITSCH, Professor der Geburtshülfe and Gynäkologie zu Bonn. Fifth edition. Halle, 1894: Max Niemeyer, publisher.

This volume will be found a most useful guide to the study of operative obstetrics. The distinguished author has covered the ground well and thoroughly, leaving little to be desired. The following subjects are treated: The theories of the mechanism of labor, mechanism of occipital presentations; forehead, face and chin presentations; the various applications of the high and low forceps; the positions of the fœtus and methods of extraction; version; operations employed in fœtal dystocia, operations employed in dystocia produced by the mother; straitened pelves and the treatments indicated; treatment of abortion; placenta prævia; treatment of post-partum hæmorrhage; and lastly the treatment of apparent death of the child.

The work is a very good exposition of obstetric surgery, and many of the teachings contained therein will be more or less new to the English speaking student.

We commend the book.

THE THEORY AND PRACTICE OF MEDICINE. By JAMES T. WHITTAKER, M. D., Professor of Practice in the Medical College of Ohio, etc., etc. New York, 1894: William Wood & Co., publishers.

After carefully examining this treatise on the practice of medicine, we feel no hesitancy in placing it

among the best American works. That it shows a tendency of being a copy of Eichorst's work, there is no doubt, but it is clear, thorough and practical.

The author has employed the centigrade scale in many of his temperature charts, and we congratulate him on this point and trust that other workers will soon adopt this system. Another excellent feature is that the chapter on entozoa is quite complete, a subject which we believe is of great value. Bacteriology is up to date and is brought up and discussed in the proper places.

The pathology is also well treated and exposes the modern teachings.

We can recommend this work as an excellent guide both to the student and general practitioner.

THE EVOLUTION OF THE DISEASES OF WOMEN. By W. BALLS HEADLEY, M. A., M. D., F. R. C. P., Lecturer on Midwifery and Gynecology at the University of Melbourne, etc. London, 1894: Smith, Elder & Co., publishers.

This work is both practical and philosophical in its tendency, and that it came from the pen of a thinker is easily appreciated by its perusal. As is stated by the author in his preface, evolution is the mode of progress of the world. The plan of the book is to show the conditions of the sexual relations as they have evolved in the human race, and the positions at which they have now arrived, with their causations and influences on woman; and to trace these influences through their progressive stages, so far as they have

tended in the direction of disease. Also to indicate the mode of prevention of such causes of disease, and of such disease, not only in the social, but also in the medical aspect.

The following subjects are treated : The relation of the sexes ; the influences of civilization on the sexual relations and on woman ; the development of the female organs ; endometritis, gonorrhœa, the granular os, laceration of the cervix and perineum, subinvolution, anteversion and flexion, retroversion and flexion, lateoversion and flexion, diseases of the Fallopian tubes, extra-uterine foetation, atresia, peritonitis, evolutionary diseases of the ovaries, phlebitis and embolism, pelvic cellulitis, cancer and myoma of the uterus, general principles of treatment.

The work is illustrated mostly by original drawings.

DISEASES OF THE CHEST, THROAT AND NASAL CAVITIES. By E. FLETCHER INGALS, A.M., M.D. Professor of Laryngology and Practice, Rush Medical College, etc., etc. Third and revised edition. New York, 1894: William Wood & Co., publishers.

The fact that this book has arrived at its third edition shows clearly that it has been favorably met with by the profession.

Dr. Ingals has written a most practical book, especially for those engaged in general practice, as it covers all knowledge necessary to the physician of the specialties of which it treats.

The author has not discussed questionable theories, or has he given therapeutical methods which do not strongly commend themselves to his judgment. As little over a year has passed since the second edition was issued, no great change in the text has appeared necessary, but a few

pages have been added to keep the work abreast with the times.

THE TWENTIETH CENTURY PRACTICE OF MEDICINE. An International Encyclopædia of Modern Medical Science by leading Authorities of Europe and America. Edited by THOMAS L. STEDMAN, M. D. To be complete in twenty volumes. Vols. I. and II. New York, 1895: William Wood & Co., publishers.

We have before us the first two volumes of what is probably the greatest medical literary undertaking that America has yet seen. The great excellency of this encyclopædia cannot be too highly estimated, and, although it will take four years before it will be completed, still this fact does not take away from its value ; and we notice that the subjects that are most likely to make the most rapid progress, namely, infectious diseases and bacteriology, are the ones to be treated in the last volumes.

Volume I. treats of the uropoietic system, the work opening with a splendid exposition of the diseases of the kidney, by Dr. Delafield. The surgical diseases of the kidneys and ureters come from the able pen of Dr. Reginald Harrison, of London, who also has contributed the article on the diseases of the bladder. The diseases of the prostate and male urethra are lengthily and well dealt with by Dr. G. Frank Lydston, of Chicago. The diseases of the urine are described by Dr. E. Henry Fenwick, of London ; Dr. Howard Kelly, of Baltimore, has contributed the section on the diseases of the female bladder and urethra, and who could have accomplished the task better than he ?

The second volume is devoted to nutritive disorders. The book opens

with a good chapter on Addison's diseases, and other diseases of the adrenal bodies, by Sir Dyce Duckworth, of London, and is followed by an inexhaustive article on diabetes mellitus by Carl von Norden, of Frankfort, Germany. No less in completeness or interest are the chapters on rheumatism, by T. J. MacLagan, of London, and gout, by Henry M. Lyman, of Chicago.

Archibald E. Garrod has written the chapter on arthritis deformans, while the one on diseases of the muscles is by the beloved and regretted Dujardin-Beaumetz, of Paris. The closing article on obesity is by M. J. Oertel.

We cannot say too much in praise of this work, which will be found a complete medical library in itself.

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—OF—

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ORIGINAL COMMUNICATIONS.

The Etiology and Treatment of Inflammations of the Uterine Appendages.*

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NEW YORK.

Gynæcologist to the Western Side German Clinic, etc.

FOR some years past the surgical tendency of the gynæcologist has completely overshadowed the rational treatment of diseases of the uterine appendages, and may be regarded as a confession of inability to cure; for no more can it be claimed that ablation of organs so important to the female economy is a cure of the morbid process than amputation of a limb is a cure of the injured or diseased member.

General surgery has passed this stage of wholesale sacrifice of useful members, and today the saving of an injured limb is more creditable to the surgeon than a skilfully performed amputation. Gynæcology must soon

pass this stage also, for the limit of extreme pelvic surgery has been reached, and the sad plight of the woman (?) who has survived the removal of her ovaries, tubes and uterus, is beginning to be realized. I venture to predict that the gynæcologist who saves the greater number of tubes and ovaries within the next ten years will win greater renown than he who removes the most. Any one who has had experience with diseased appendages will admit that it is much easier to remove them than to attempt to bring about resolution of the morbid process and save them. The same is true of a badly crushed arm or leg. But which is the more creditable procedure, and which would you prefer to adopt

*Read before the section on Gynæcology at the American Medical Association at Baltimore, Md., May 7, 1895.

if the patient was your own wife or daughter?

The contention is not that these inflammations of the tubes and ovaries can always be cured, but that it is frequently possible, and unless immediate operative interference is actually demanded, the patient should be given the chance, and the attempt should be made before submitting her to a radical operation. In view of the fact that treatment directed towards attaining this end does not militate against a subsequent operation for their removal, should it become necessary, but on the contrary, improves the chances of an ultimate successful result—it is a perfectly rational procedure, and one which should always be adopted. Remember that once removed they cannot be replaced.

In the light of recent developments in the etiology and pathology of inflammations of the appendages, is not the removal of these organs without previous attempt at a cure or removal of the cause, which may be operating to maintain such a condition, to be regarded as a serious error? It would certainly be more rational to institute measures first which will bring about a cure of any disease of the uterus or other pelvic organs which may be acting as a maintaining cause. It will be claimed that this is the course usually pursued and that no case is submitted to a radical operation unless it is absolutely certain that it is the proper procedure to be adopted. But is this strictly true? Is it not a fact that tubes and ovaries are being removed every day without any previous effort on the

part of the operator to cure the disease or remove conditions which may be producing it? It may be true that not so many are sacrificed now as a few years ago, but they are still removed too often for disease which is amenable to patient and persistent treatment, or which may be cured by a minor surgical operation involving no risk, such as curettage or repair of a lacerated cervix.

My purpose, in presenting this subject for your consideration, is to show how many of these conditions are curable where a radical operation is usually believed to be necessary, and I will relate briefly the histories of some cases, which are conspicuous examples substantiating this statement.

It will not be possible in a brief paper like this to consider these conditions in other than a general way, for to go into the details of the different stages of the morbid process would consume too much time.

Clinically, inflammations of the uterine appendages may be divided into salpingitis and ovaritis, for though they are often so intimately associated as to render their separation impossible, yet it is sometimes true that either the one or the other (tube or ovary) is more distinctly involved and demands separate consideration. It is quite impossible to institute rational and successful treatment without first ascertaining both the direct and indirect cause of the morbid process. Usually the cause of salpingitis is readily ascertainable, but that of ovaritis is often remote and obscure. It is evident, therefore, that it will be more satisfactory to

consider them separately in outlining the plan of procedure to be adopted.

Salpingitis will be divided into catarrhal, and that due to septic infection from the extension of a similar inflammation from the endometrium. Catarrhal salpingitis may occur coincidentally with a catarrhal endometritis without previous existence of the latter, and occurs as a result of imprudences which precipitates suddenly and frequently a marked pelvic congestion or engorgement. In this respect it differs from inflammation due to septic infection, as well as in another very important particular, viz.: that it is less virulent and is consequently more readily controlled. I believe that it seldom occurs as an acute inflammation, but that in the beginning it rather partakes of the nature of the so-called subacute process, which is simply a hyperæmia attended with hypersecretion from the mucous membrane. As the result of a continued and repeatedly provoked hyperæmia, a chronic inflammation of the mucous membrane is developed, which may eventually involve the deeper tissues and produce structural changes. It is possible that the secretions may accumulate in the tube and produce distention, since the calibre of the uterine end of the tube becomes obstructed in consequence of œdema and infiltration of the mucous membrane. The abdominal ostium must also become obstructed to permit distention, and this occurs no doubt in a similar manner. Such tubes are frequently mistaken for pyosalpinx or hydrosalpinx and removed. I am satisfied that hydrosalpinx, when

formed on one side only, with the other tube in good condition and functioning, is frequently produced in this manner, and is rather the result of chronic catarrhal inflammation than septic infection from the endometrium. Acute exacerbations may occur when the tube is the seat of chronic catarrhal inflammation, which may readily be mistaken for a primary acute salpingitis. The process is rather perisalpingitis, due to an extension of the inflammation from the interior of the tube. Such cases may present to a most rigid examination all the appearances of inflammation due to septic infection, and the appendages are often found to be surrounded by exudation if the inflammatory process has been going on for some time. There is this difference, however, it yields more readily to treatment. This may be due to the fact that the structural lesions are not so extensive.

As a proof of what has been said we often find the appendages the seat of chronic inflammation, and surrounded by more or less exudation in cases where there has been no chance for infection, and there is no history of an acute stage having preceded it.

On the other hand, inflammation of the tubes due to septic infection will be ushered in by an acute inflammatory process of marked severity, which must occur sooner or later after infection of the endometrium, and as a result deep structural lesions occur early. When they are extensive, and especially when due to gonorrhœal infection, there is little chance of producing resolution by

any method of treatment. The inflammatory process, which first involves the mucous membrane by extension from the endometrium, rapidly spreads to the muscular structure of the tube walls and even to the peritoneal covering. The abdominal ostium is obliterated early, and drainage into the uterus is prevented by infiltration of both the mucous membrane of the tube and the uterus, and also of the muscular structure. This obstruction may or may not be permanent, this depending upon the extent of the lesions produced. Some authorities contend that the uterine end of the tube is seldom occluded, but that the obstruction due to infiltration may be overcome and the tube drained into the uterus. I believe that when the inflammation has subsided in the tube and it had become distended, the obstruction at the uterine end is often maintained by hypertrophy of the endometrium surrounding the orifices of the tubes upon its surface, and that it may be overcome by removing this condition. When this is possible and drainage can be maintained, a cure is possible, though the function of the tube may not be restored. If, however, actual occlusion of the uterine end of the tube has occurred, drainage cannot be established, and a radical operation is imperative if there is much distention. Cases where the tube is bent upon itself, prolapsed, and is adherent, come under this head.

Ovaritis exists as an acute or chronic inflammation, and is frequently a sequence of salpingitis, though it sometimes occurs independently of this condition. The lymphat-

ics may convey infection directly from the uterus to the ovaries, and thus septic inflammation may result there independently and without involvement of the tubes, though this is rare.

The acute form may occur coincidentally with salpingitis, being produced by the same causes, but a condition of hyperæmia and hyperæsthesia, which is sometimes regarded as an inflammation, frequently results from imprudences during menstruation, too frequently and excessive coition, ungratified sexual excitement, and constipation.

Structural changes characteristic of chronic inflammation may result from the acute stage, but chronic ovaritis does not often follow the acute process. Most frequently it begins insidiously, and develops gradually from this condition of hyperæmia. Probably one of the most frequent causes of chronic ovaritis is laceration of the cervix during parturition, with consequent infection through the medium of the lymphatics, which are well known carriers of infection. It is a well established fact to my mind that this lesion, if unrepaired, is a constant source of irritation, which reflects upon the ovaries and maintains in these organs a state of hyperæmia and hyperæsthesia. Further on I will relate several instances of this kind where a cure was effected by repair of the cervix.

Chronic ovaritis may exist as a condition of atrophy, hyperlasia or cystic degeneration, but the term is most frequently applied to a condition of passive hyperæmia, which if unrelieved may result in hyperplasia.

This may be produced by the causes mentioned above, or by any other cause of irritation of the uterus, such as an endometritis or growths within the uterus, especially if located in the cervical canal, such as a small polypi.

Fissures of the anus, ulceration of the rectum, and chronic proctitis, are also frequent causes of ovarian irritation and hyperæmia, which are often overlooked.

Any treatment which has for its aim the establishment of drainage of diseased tubes into the uterus, and the removal of the hyperæmia and infiltrations, and the absorption of the surrounding exudation, may be regarded as a perfectly rational procedure, and one which should be adopted when feasible in preference to their removal. If this object can be accomplished (and it is frequently possible) a cure may be effected, and a woman will be restored to a life of usefulness and happiness.

If this much will be admitted the principal thing to be considered is the best manner of accomplishing this result.

When salpingitis is found to be associated with a severe type of chronic endometritis, with an hypertrophic or granular condition of the mucous membrane, the first step in the treatment should be dilatation of the canal, through curettage of the cavity of both the body and the cervix, followed by packing with iodoform gauze to secure thorough depletion and drainage. Especial care must be observed in removing the hypertrophied membrane from the vicinity of the internal os and both

cornua. This latter is best secured by using a small size curette which will reach in the angle at the entrance of the tube, and should be employed after the cavity has been gone over by an instrument of larger size. The removal of these granulations or hypertrophied elevations of the mucous membrane about their orifices, facilitates drainage from the tubes in the same manner as removing the superfluous granulations about the entrance of a fistulous canal. They obstruct drainage in the same manner. A sharp curette may be required for removing the hypertrophied tissue at the internal os. The extent of dilatation required is not nearly as great as is usually considered necessary. A moderate dilatation under anæsthesia, gradually accomplished by means of the steel dilator, sufficient for the easy introduction of the curette, is all that is necessary. The gauze packing, if carefully done, will effect still further relaxation. Divulsion is unnecessary and should never be done.

The technique of the operation is important, and is as follows, viz. :

After sufficient dilatation has been accomplished, the double current irrigator should be introduced, and the cavity thoroughly cleansed with either a solution of bichloride (1 to 1000), or what I often prefer, a one per cent. solution of lysol (hot). Then the cavity is curetted and again irrigated with the same solution, until all oozing has ceased. The cervix is now fixed by a double tenaculum, and a strip of 20 per cent. iodoform gauze, the absolute sterility of which has been previously assured, is intro-

duced by means of a long applicator forceps, here shown, and carried well up into both cornua, the cavity filled and cervical canal also. The gauze is cut into strips one yard long, and three-fourths to one inch wide. Usually the whole strip can be packed into a uterus of moderate size. The vagina is then filled with wider strips of the same gauze, and an aseptic pad is placed against the vulva. The patient is to be confined to bed while the gauze remains in the uterus. Usually a week is sufficient for this part of the treatment. Instead of permitting the gauze to remain undisturbed in the uterus for several days, which is the practice of some gynecologists, I deem it necessary to remove and replace in every twenty-four hours, at least, for it ceases to drain when the gauze in the vagina becomes saturated. Upon removing it, the cavity of the uterus should always be irrigated with a hot one per cent. lysol solution, and the gauze is applied as described above.

Let it be understood both by the physician and the patient, that the operation and the subsequent gauze packing is only to be regarded as a preliminary step in the treatment, and that it is necessary to maintain free drainage from the uterine cavity and tubes, remove all sources of irritation, and institute measures which will promote absorption of surrounding exudates and relieve the engorgement of the pelvic vessels. To accomplish the first end a patulous condition of the cervical canal must be preserved, and the uterine cavity must be kept free from all *débris*, such as small clots and particles of mucus,

which, if retained, would be a source of irritation. This is accomplished by the occasional introduction of a small (clinical) irrigator and washing out with a one per cent. solution of lysol; or Thiersch's solution may be used if an astringent action is desired. I never use anything else, and never employ iodine or carbolic acid in these cases. If the canal becomes too much contracted to permit the easy introduction of the irrigator, it is connected with the negative pole of the galvanic current as an electrode, and about 10 m. turned on. This will facilitate its introduction; and if the current is allowed to remain on during the irrigation it exerts a stimulating action upon the endometrium, through the medium of the liquid projected through the irrigator.

The second object (the absorption of exudates and the restoration of the normal circulation of the pelvis) is accomplished by the persistent use of the faradic current, made sufficiently stimulating to suit individual cases. I know of no better way of accomplishing this end, and nothing which I have employed has given such prompt and satisfactory results. It serves a double purpose in these cases, since it not only quickens the capillary circulation and hastens absorption, but by stimulating contraction of the tube walls and the uterus it favors evacuation of the tubes into the uterus and empties the uterus as well.*

* In a paper which I read recently before the New York Academy of Medicine upon the Physiological Effect of Periodic Induced Currents, the exact manner of their action in bringing about these results was clearly explained. This paper was published in the American Medico-Surgical Bulletin, April 15, 1896.

In some of these cases it is better to institute some preparatory treatment before the operation, which will relieve the extreme sensitiveness, lessen the surrounding congestion, and remove the infiltration; and for this purpose I employ the fine faradic current to great advantage. At the same time, of course, the bowels should be kept relaxed, and the patient's diet and digestive apparatus must be regulated.

Under this plan of treatment it has frequently happened that tubes which were considerably distended have been evacuated while the gauze was in the uterus, and they have not refilled. In other cases evacuation does not occur until after the packing has been discontinued and the stimulations of the faradic current is employed. The probable explanation is that in some instances the barrier to drainage from the tubes is infiltration of the tube walls or the pressure of surrounding exudation, which is removed by this latter method of treatment. Faradic stimulation here promotes the evacuation of the tube into the uterus by exciting contraction of the tube walls, which is vermicular and in the direction of the uterus.

When salpingitis is associated with a simple catarrhal endometritis, curettage is not needed. The occasional introduction of a conical dilating electrode, connected with the negative pole of the galvanic current (10 to 15 m.), to render the canal free and favor drainage from the uterus, together with frequent applications of the fine wire faradic current to relieve engorgement of the pelvic ves-

sels and promote the removal of infiltration of the mucous membrane, will give satisfactory results in the majority of cases. When the secretion is abundant and does not drain away readily it is better to irrigate the cavity twice a week with a warm lysol solution, by means of the small clinical irrigator, followed each time by faradic stimulation with the fine wire current. This may be done at the office, and after a short rest the patient may be permitted to return home. It is astonishing what immediate and lasting relief this treatment affords the patient. If she comes into the office with a dragging sensation in the pelvis and a tender painful condition about the uterus, she is immediately relieved by washing out the uterus, because the source of irritation—retained secretions within the uterus—has been removed. Frequently the symptoms do not return for several days.

Some care is necessary, however, in carrying out this treatment, to avoid provoking undue irritation in introducing the irrigator and washing out the uterus. No force should be employed; but ascertaining the direction of the canal, the instrument is inserted as far as it will enter readily which is usually up to the internal os, then the galvanic current is turned on through the irrigator, which is then employed as an electrode, and it is allowed to slip in under very gentle pressure. The irrigation should be continued until it is absolutely certain that everything has been washed away and the cavity is clean. Then the inflow of the solution must be stopped, and that remaining in the

cavity of the uterus must be permitted to drain away through the return flow of the irrigator before it is removed. The cavity is thus left perfectly clean and empty.

The treatment of ovaritis consists in removing the source of the irritation, or the cause, when ascertainable, as far as possible. When it is associated with and dependent upon an endometritis or salpingitis, these should be treated in the manner described above. When dependent upon an injured or diseased cervix, this must be repaired or removed. If it is found that the rectum is the seat of disease, or there is fissure of the anus, it must be cured before we can expect to relieve the ovarian irritation.

Relief of the symptoms may be afforded by treatment directed to the ovary alone, but it will only be temporary, and not permanent until the cause of irritation is removed.

I recall many instances where patients, suffering with ovaritis, have been brought to me by their physicians, who had employed electricity for months without permanent benefit, and it has been found that the cause of the condition has been disregarded and overlooked.

In employing this agent in the treatment of ovaritis, the preference is to be given to faradization in the majority of cases, because it affords quicker relief of the pain and the result is more satisfactory, especially if the condition is one of hyperæmia with infiltration or exudation. In conditions of hyperplasia, galvanism or a combination of the faradic and galvanic currents is more appropri-

ate and gives better results. In employing the galvanic current for these conditions, a moderate strength, continued for a longer time, produces the best effect.

The importance of discriminating in the choice of the current to be employed in certain conditions of ovarian inflammation, as well as the necessity of removing the cause of the irritation, is well illustrated in the following case.

CASE I. The patient, a young girl of eighteen years, has been for over a year under the care of a prominent gynecologist in New York, for ovaritis. During this time he had persistently employed the galvanic current, and failing to derive any benefit therefrom, he suggested removal of the ovary as the only possible means of relief. She was then brought to me, and began to show immediate improvement when the fine wire faradic current was substituted. But no permanent benefit was obtained until the rectum and anal orifice were restored to a normal condition. The cause of the ovarian irritation and hyperæmia proved to be an inflamed, rectum with fissure of the anus, associated with obstinate constipation. Two years have now elapsed, there has been no return of the trouble, and the patient is in excellent health.

The digestive apparatus is often at fault in these cases, and constipation is frequent and annoying. There is no doubt that this is a prolific cause of ovarian irritation and inflammation which, is often overlooked or disregarded.

Malnutrition, which may be attri-

buted often to disorder of the digestive apparatus, brought on by improper food, is also indirectly a cause of ovaritis, and is to be counteracted by careful attention to the diet, and the state of the excretory organs.

A congestion of the ovary may be maintained by interference with its circulation, due to the pressure of an exudation in the broad ligament, which may be removed by stimulating absorption with the fine wire current.

A condition of atrophy of the ovary is frequently produced by the pressure of an exudation, which interferes with its circulation and function, and is often associated with either absent or very scanty and imperfect menstruation. It may be cured if the exudation can be removed, and the menstruation restored to normal activity, if it has not existed for too long a time.

Cystic degeneration of the ovaries is very rarely benefitted by any form of treatment, and if the symptoms are persistent and are sufficiently annoying to warrant it, they should be removed. This is a condition, however, which it is difficult to diagnose without inspection.

If a septic inflammation of the ovary has progressed to that point where an abscess has developed, its prompt removal is the only course to be adopted: and neglect to do so is as unwarranted as a hasty operation in other conditions when it is not necessary.

Ungratified sexual desire has been stated as a cause of ovarian irritation and inflammation, and there is no doubt that it exists in some in-

stances without the knowledge of the woman so afflicted. A case which serves as a forcible illustration of this was related to me by a gynaecologist of some prominence in New York.

CASE II.—A lady of refinement and education, who was left a widow after several years of married life, without children, developed a most intense ovarian irritation and inflammation, which gave rise to so much suffering as to make her an invalid. Everything possible had been done for her by different specialists whom she had consulted, but with no benefit. She was advised and urged to have her ovaries removed, and finally consented to the operation if, after an anticipated trip and rest abroad, she was no better. On the steamer going over, she chanced to meet a gentleman of whom she had become very much enamored. They became engaged, and upon her return to New York she hastened to ask her physician if her condition should prevent her from marrying, and if marriage would aggravate her condition and cause greater suffering. He discouraged her and advised against it, believing that it would be worse for her. He again urged her to have the operation performed. Much to his surprise, a month or two after this, he received an invitation to her wedding. Meeting her there she explained that she had not taken his advice because she was so deeply in love with the gentleman that she had determined to take the chances, and, if she became worse afterwards, with his consent she would then have the operation performed. Several months

elapsed before he again, saw her during which time they were absent from the city. She then told him that from the time they were married she ceased to suffer, and was now perfectly restored to health, which her general condition made quite manifest, and asked him if he could explain her cure. He suggested the cause of her suffering, which had been removed, but she disclaimed any knowledge whatever of the existence of any such cause.

The following case shows that an intractable inflammation of the ovary may be overcome by restoring a normal condition of the uterus and cervix, which was the cause.

CASE III.—Mrs. B., aged thirty-five, married at seventeen, two children, the last twelve years old, came to my clinic in May, 1893, suffering with intense pain in the left ovarian region. The left ovary was enlarged to about the size of a walnut, and there was chronic metritis and endometritis, with an old laceration, and cystic degeneration of cervix.

The pain in this case was relieved temporarily by faradization, but returned with the same severity whenever treatment was discontinued. The patient's general health improved greatly while under treatment, but as no permanent benefit to the ovarian condition was obtained, I feared that I would be obliged to remove the ovary. Before doing so, however, I curetted the endometrium and repaired the cervix, being particular to remove all the diseased tissue as possible. Upon getting up after the operation she was overjoyed to find that she no longer suffered pain

in the ovary, and there was no return of it. Within three months she became pregnant, though she had been sterile for twelve years, and subsequently was delivered at term. She has suffered no inconvenience with the ovary since, and it is about normal in size.

The next case, one of fixed retroflexion, cervical laceration, with metritis and endometritis, salpingitis and ovaritis, resembling cystic degeneration, illustrates what may be accomplished by patient and persistent treatment and restoration of a normal condition of the cervix.

CASE IV.—Mrs. T., aged thirty-three, married fifteen years, mother of three children, last seven years of age, was sent to me by her physician in Columbia, S. C., in October, 1893. Her ill health dated from the birth of the last child, which was followed by pelvic peritonitis, due to septic infection following labor. When she first came under my care she could not walk a block without great fatigue and suffering; she was anæmic and her general health was greatly impaired.

Examination revealed an immovable retro-flexed uterus, surrounded by exudation, both tubes and ovaries involved, a bad metritis and endometritis, with bilateral laceration of the cervix, and laceration of the perineum.

Cœliotomy had been advised, as the only possible means of relief.

The treatment instituted was fine wire faradization daily, and drainage from the uterine cavity, promoted by the application of negative galvanism to the canal. Later when the uterus

was rendered movable and could be replaced, a soft whalebone pessary was introduced. Six weeks after beginning treatment the cervix and perineum were repaired. The period occupied in the treatment was three and one-half months. At this time she was able to return home, and was directed to have the faradic applications continued twice or three times a week. At this time she was able to walk a considerable distance without fatigue or suffering any pain or inconvenience in the pelvic organs. She was wearing a hard rubber pessary.

She continued to improve, and within a year after she had entirely regained her health and strength.

The next case shows how very extensive pelvic exudation may be removed by faradic stimulation unaided.

CASE V.—Mrs. L., aged thirty-seven years, one child twelve years before, and one miscarriage six years before, came to my clinic in July, 1893. Menstruation consisted only of a few drops, and was attended with great pain. She could walk only with the greatest discomfort, the slightest jar giving her great pain.

Examination revealed the pelvic organs absolutely fixed by surrounding exudation. The diagnosis was chronic metritis and salpingitis, and ovaritis with exudation. There was an old laceration of the cervix with cystic degeneration. Under faradization alone, nothing else being employed, the pain was immediately relieved, and within a few months the exudation had disappeared and the uterus was movable. Subsequently

the cervix was repaired, the diseased tissue being carefully removed. The patient is now in excellent health, and menstruation is free from pain and more normal in amount. The uterus is freely movable. Examination under anæsthesia, at the time of the operation, showed no abnormal condition of the appendages remaining.

Case six illustrates the benefit to be derived from curettage and gauze packing in securing drainage of distended tubes into the uterus.

CASE VI.—Mrs. H., aged twenty-eight years, married six years, consulted me in December, 1894. She suffered only slight dysmenorrhœa, until a miscarriage, which occurred two years after marriage, when she began to have more or less pelvic pain and profuse leucorrhœa.

Examination revealed an endometritis with salpingitis, left tube distended to the size of the thumb, with some infiltration about the left tube and ovary.

Dilatation, curettage and gauze packing, secured evacuation of the tube after the third day. The subsequent treatment consisted of irrigation of the cavity twice a week. Drainage was maintained and the tube did not refill. Duration of treatment six weeks. The cure has been complete and so far permanent.

The next case was one of pyosalpinx; was drained into the uterus and cured without curettage, and pregnancy followed.

CASE VII.—Mrs. A., aged twenty-three years, married four years, sterile, consulted me in May, 1893, for a condition which began shortly after marriage. She suffered some dys-

menorrhœa before marriage. About a year after she became very much worse and began to suffer with pelvic pain, back ache and leucorrhœa. Her general health was greatly impaired and she was anæmic.

Diagnosis.—Endometritis and salpingitis, the right tube being distended to about the size of a small egg.

Cœliotomy had been advised by specialists in Detroit and Pittsburg, but was declined.

The tube was so much distended and obstructed I feared that I also would have to advise an operation, and told the patient that nothing could be promised positively from treatment; but under the negative galvanic applications to the uterine canal and fine wire faradization the tube began to drain into the uterus within two weeks and eventually emptied completely. The discharge was mucopurulent in character. The walls of the tube contracted, and it did not refill.

The duration of treatment was three months. She was then so well that she went West to join her husband. A year later, on her return to New York, I found her pregnant. She was confined in October last, the labor being normal and easy. Her health has been good since.

In marked contrast with the foregoing case, the next illustrates a class of cases which cannot be drained, though the symptoms may be temporarily relieved by treatment.

CASE VIII.—Mrs. S., aged twenty-four years, married six years, sterile, consulted me in August, 1892, for the relief of a constant dragging pain in the back over the sacrum and pelvic,

pain referred more especially to the left side associated with dysmenorrhœa, and at times considerable leucorrhœa. These symptoms dated back several years, but had become more pronounced within the last two years.

Examination revealed a smooth elastic tumor, posterior to the uterus in Douglas' pouch, which proved to be an adherent hydrosalpinx. The left ovary was sensitive and enlarged, but the right could not be made out.

The patient was told that treatment would afford only temporary relief, that an operation for the removal of the diseased tube was advisable, and would eventually be necessary. She objected to the operation, but asked that some treatment be instituted which would relieve the symptoms. The attempt was made to drain by means of galvanic applications to the uterine canal and faradic stimulation, with the result that the endometritis was overcome and the pain relieved within two months. She then discontinued treatment, but was advised to have the operation performed as soon as the symptoms recurred. She returned after four months, stating that there had been no recurrence of the pain, leucorrhœa or dysmenorrhœa; but for two weeks she had a return of the backache, and she made up her mind to undergo the operation. The operation was performed March 26, 1893. The tumor proved to be a hydrosalpinx of the right tube, and the ovary of the same side was cystic. The tube was bent upon itself near its attachment to the uterus, and was consequently occluded, and drainage into

the uterus was prevented. The tube and ovary of the other side were left undisturbed. The patient made a good recovery, and has enjoyed excellent health since.

CASE IX.—Mrs. G., aged 26 years, married seven years, consulted me in June, 1889. Examination revealed partial fixation of the uterus, a mass to the left which proved to be the tube distended with pus and surrounded by exudation. There was also an endometritis with considerable erosion of the cervix. Cœliotomy had been advised.

Her trouble dated from a miscarriage, and an attack of pelvic inflammation one year later, which confined her to bed for eight weeks.

The treatment instituted, in this case, was drainage through the uterus by means of negative galvanic applications to the endometrium and cervix, which acted by overcoming the endometritis and securing free drainage from the cavity, and faradization to promote absorption of the exudation and stimulate evacuation of the tubal contents.

The treatment extended over a period of six months, but her attendance was irregular, as is the case with most of these patients when they notice improvement.

The result obtained was absorption of the exudation drainage of the tube into the uterus, disappearance of the tumor, because the tube did not refill, cure of the endometritis and mobility of the uterus.

The patient was in good health two years afterwards.

The next case is one which illustrates how catarrhal salpingitis yields to this method of treatment.

CASE X.—Miss E., aged nineteen, consulted me in April, 1892. About eight months previously, after exposure to cold during menstruation, she began to suffer pelvic pain, backache and bearing down, with profuse leucorrhœa. This continued for some time before she consulted a physician. She improved somewhat under treatment instituted at that time, but shortly afterwards she got a wetting, which precipitated an attack of acute inflammation, confining her to bed for four weeks. After being about for two weeks she was again taken sick and was sent to a hospital in this city. There she was treated by rest in bed, blisters to the hypogastrium, and hot water vaginal douches with only slight benefit. Cœliotomy for the removal of the ovaries was then urged, which she refused.

At the time of consulting me she was the picture of adject misery, being pale, anæmic and haggard, and she was never a minute free from pain except when asleep. Walking or the least exertion greatly increased her suffering. Her appetite was poor and she did not sleep well. I found her pelvis so exquisitely sensitive to vaginal touch that a satisfactory examination was impossible. There was a profuse mucous discharge and the uterus was fixed by infiltration of the surrounding structure.

The diagnosis was catarrhal endometritis, salpingitis, and ovaritis.

The treatment instituted was fine wire vaginal bi-polar faradization. The first application, which was continued for twenty minutes, dispelled all pain and rendered her perfectly comfortable for eight hours afterwards. This was repeated every

day. After the third application she remained free from pain twenty-four hours, and moderate exercise caused no pain. This plan of treatment was continued and supplemented later with negative galvanic applications to the uterine canal to facilitate drainage. At the end of two months and a half she was able to resume her occupation as stenographer and typewriter. Her health has been good since, and there has been no recurrence of the trouble.

This is another case of catarrhal salpingitis, associated with ovaritis and endometritis, which yielded to treatment after cœliotomy had been advised.

CASE XI.—Mrs. E., aged twenty-one years, married five years, was referred to me by Dr. R. W. Taylor of New York, in April, 1894. Three years previous, according to her statement, exposure brought on ovarian trouble which resulted in inflammation. This did not yield to the usual treatment, and cœliotomy was advised, which she declined.

The diagnosis made at the time she came under my care was catarrhal salpingitis, ovaritis and endometritis, associated with antifixion. There was some infiltration about right tube and ovary.

The treatment instituted was drainage of the uterine cavity, secured by negative galvanism to the canal, and fine wire faradic stimulations, which afforded prompt relief and resulted in a cure. The period of active treatment was about two and one-half months. She was kept under observation for several months afterwards but there was no recurrence of the

trouble. The extreme antifixion was overcome. At the present time the patient is in excellent health.

CASE XII.—Mrs. C., aged thirty-one years, widow, one child seventeen years old, was referred to me by her physician. Some years before she had an attack of pelvic inflammation, resulting from septic infection, which caused fixation of pelvic contents. The uterus was retroflexed and surrounded by exudation, which involved the appendages of both sides. Both ovaries were enlarged and exceedingly sensitive. The right tube was distended. The cervical canal was contracted, and consequently drainage was defeated. Her menstrual period was accompanied with so much pain and prostration that she was compelled to remain in bed for the entire period.

The attempt to dilate the canal and promote drainage by means of negative galvanism provoked so much irritation that it had to be abandoned. But the extreme sensitiveness was relieved by faradization, and the uterus was rendered partially movable. Then, under anæsthesia the canal was dilated, the uterine cavity was thoroughly curetted and packed with gauze. Before the gauze was introduced the uterus was replaced by careful manipulation, which freed the adhesions. The vagina was then tamponed with iodoform gauze to maintain the position of the uterus.

The distended tube discharged into the uterus within a week, the fluid being thin and serous in character.

This treatment was followed by frequent irrigation of the uterine cavity, with faradic stimulations, and a

pessary was inserted as soon as it could be borne.

Now, three months after the operation, the position of the uterus is maintained by a pessary which is worn without discomfort. The tube has not refilled. She experienced no pain, though she is constantly on her feet in attending to her duties as housekeeper. She menstruates without pain and does not remain in bed during the period as was formerly necessary.

This patient cannot be considered cured yet, but she is in a condition

where improvement will continue and a cure will result.

Cœliotomy had been advised in this case, and at one time I feared it would be necessary.

I could relate many more cases similar in character, but these will suffice to illustrate my point. Remember, they are selected cases, many of them being chosen because a radical operation had been advised by another operator before they came under my care.

351 West Fifty-seventh street.

Address to the Graduating Class of the Training School for Nurses at the Johns Hopkins Hospital.

JOHN L. HILDRETH, M. D.,

Professor of Clinical Medicine in the Tufts College Medical School.

Members of the Graduating Class :

Special interest attaches to the beginning and ending of chapters of human experience. You stand today at the close of the period of preparation for your work, and at the threshold of the work itself. It was no slight matter when you made choice of this vocation. The woman of twenty-three, who leaves her home and her friends and the society of the outside world, and comes to live within the enclosure of a hospital, devoting her time and strength to the care of the sick, their suffering bodies and suffering minds, enters upon a task that is unlike any other occupation that woman undertakes.

Her life in the hospital is widely different from that to which she has been accustomed. The atmosphere of such an institution is unknown to those who are outside. They cannot appreciate what it means to be among so many who are distressed in mind and body, who wait with hope or apprehension the termination of their illness, and who look to the physician and the nurse for relief from pain. Save by personal experience, no one can realize what this is to a woman.

You have lived here in a family by yourselves, with a certain daily routine of excitement and interest in your thought for your patients. You have had the usual varied exper-

iences, and now you have completed this period of training, and are ready to go out into the world to *do* that for which you have been preparing. The training you have had has been of no ordinary kind. It is not too much to say that you have probably had the best, the most thorough, the most exact, the most complete that this country affords. You have seen the most skilled medical work, the most scientific, the most painstaking that you would be likely to see in America.

Thorough, however, as this training has been, and favorable as are the circumstances under which you have pursued your studies, you need still to prepare yourselves by further study, by reflection, by observation, by lessons — sometimes painful, it may be—in the school of experience, for what you will have to undertake when you come to nurse with the general practitioner in his everyday work. Here you have begun your tasks at a fixed hour; there has been a definite routine; you have had certain duties to perform, specific records to keep; and there has been a regularity about it, a completeness in each day, quite different from anything that you will find in general nursing in families. There is a great difference also in point of responsibility. In hospital nursing, there is not only the head nurse, but the resident physician, always at hand or easily to be had, while the nurse in a family carries the responsibility alone, from one of the doctor's visit to another, and must be ready to meet sudden emergencies when she will be thrown entirely on her own resources.

There is no need for me to speak to you today of technical details. With these you have been made familiar. I wish rather to talk to you of the nurse's work from the point of view of a general practitioner. And you will pardon me if in my own way I suggest some methods, and some personal traits, which I think not only add to the comfort and promote the restoration of the patient, but are also of most assistance to the physician and the family.

It is always necessary to remember that the sick patient is not the same person he is when he is well; that the sickness, whether it is mild or severe, to some extent changes his temperament, his disposition and his feelings, and brings out strongly his peculiarities, if he has any—and most people do. The nurse as well as the doctor must recognize this fact. Your first case, very likely, will be with a medical man entirely unknown to you, and the patient also, and the family probably will be strangers to you. Your first appearance with your first patient will be quite an important matter; and it is no trifling thing that you enter upon your duties in a manner to win the sympathy and confidence of the patient and his friends. Even the way you come into the house, the way you lay aside your wraps, the way you demean yourself the first half hour, will be critically observed by all who are about. The patient's friends will watch you, the servants will watch you, and the mother of the family—if she happens not to be the patient—will scrutinize every detail of your appearance and behavior. You will

need always to be on your guard, so that when you come to a new family, a new patient or a new physician, you may be able to meet them with dignity, and with a quiet and becoming manner, to show that you are anxious to do all in your power to relieve the suffering of the patient and add to the comfort of the household.

All this may seem to you trivial, but it is not. You will be a very important personage added to the family. The patient may have been dreading to have you come. She will be eager to know how you look and how you behave; whether you will be stern and exacting, or kind and tender; whether you will prove to be agreeable or disagreeable. The introduction of the nurse into the household, and especially to the servants, is a matter of no small consequence. Bear in mind that sickness is a disturbing circumstance at the best, and that the nurse should relieve rather than increase the disturbance which it occasions. She must adjust herself to the revolutions of the household; she must not expect the household to revolve about her. It is possible for an unreasonable or inconsiderate nurse so to conduct herself as to appear far more concerned about things that affect her personal comfort and prerogatives than about anything that can happen to the patient. In no long time such a nurse may have the whole household in confusion, and the servants giving notice of their departure.

The patient does not meet the nurse as one makes an acquaintance at a five o'clock tea. The relation is on the one hand that of dependence,

and on the other of watchful and tender care. You will find nothing more useful than early to learn the peculiarities of your patient. This does not mean that you are to inquire into her family history or her individual experiences, but to know what she wants, what her fancies are in health, and thus to make her illness more endurable, and to brighten the weeks or months of distress that may lie before her. One patient likes one thing, and another another; sometimes circumstances which greatly disturb one patient exactly suit another. The nurse who tries to study the patient's condition and temperament, to discover what are her likes and dislikes, and then through this knowledge attempts to influence and relieve her, is almost always successful.

Some nurses always wait for a patient to ask for any attention she may need. They expect her to ask if she wants a glass of water, if she wishes to be turned over in bed, if she would like the room warmer or cooler, if she wants more light or less. That is not nursing; that is simply the work of a waiting-maid. It is the duty of a nurse to render unasked attentions, to do the unexpected thing to relieve pain or ease discomfort; to give the gentle and timely service which, very likely, the patient could not ask for if she were so inclined, not knowing that such alleviation was possible. These are the things which your art fits you to do.

In your care of a patient try not to fall into the mechanical method. It is of the utmost consequence that the doctor's directions concerning the bathing, the food, the sleep and the

medicines, should be followed with regularity; but do not go about with a watch in your hand, saying to the patient: "Now it is time for your bath, or your nap, or this and that," or "You must take your medicine now." The patient may be willing to do all these things punctually; but this kind of visible and compulsory accuracy almost always disturbs and distresses the sick. The languor inseparable from illness makes such a system wearisome to the patient who is seriously ill; the convalescent resents being treated like a piece of mechanism wound up to do a certain thing at a certain instant. If these things are done for the patient at the proper time, or suggested without direct reference to the watch, they are far less irksome and harassing. When trained nurses first became available, a wealthy lady, who was my patient, said she must have one. The nurse was eager, competent, and kind-hearted to the last degree, but she was extremely punctual and precise; and when she stood beside the patient's bed she was more than erect and looked ready for anything. Two days after she came, my patient asked her to retire for a moment, in order that she might confer with me. When the nurse had left the room and the door closed behind her, my patient turned to me and said: "I have had enough of this machine nursing. Do you know a good motherly woman? If you do, get her to come and take care of me." That nurse had been over-trained. She was what I call a "rule-of-thumb" nurse. And in this connection let me say that the element of

motherliness enters almost indispensably into the art of nursing. Next to motherhood there is no vocation so noble for women as that of the nurse; and the two are closely akin in the instinct which gives them value. Many a man, sick away from home, has longed for nothing so much as the touch of his mother's hand. The nurse may not wholly take that place, but she should try. The touch of the nurse should be like the touch of a mother. The nurse who is mechanical or artificial, as a result of her temperament or training, is not a proper person to minister to the sick. The training of a nurse in the hospital sometimes hardens her and makes her contemptuous of her patients' fancies, and even callous to their suffering. Such a nurse is always a failure in private nursing.

There are great differences in patients. Some are agreeable; some are quite the opposite. Some are considerate; some are peevish and exacting. The tactful nurse knows no difference and makes no discriminations between them. She gives to all the same devoted attention. It is not enough for a nurse to get on with a patient who is easy to get on with; she must humor the caprices and relieve the unrest of the difficult patient.

This leads me to remark that a bearing of unfailing cheerfulness is an important factor in the success of a nurse. The question whether a patient is to get well may not be decided by the cheerfulness and happy disposition of a nurse, but these qualities will do a great deal to impart that courage which counts for

so much when the chances of recovery hang in the balance. I learned a lesson upon this point early in my practice, when a patient of mine, who was approaching her end from a malignant disease, said to me one day: "Doctor, you cannot help showing in your face that I am not going to get well, can you?" I was entirely unconscious that I had not been cheerful in the sick-room. I thought I had not told her what was really in my mind, but she had read it all in my face, and it had disturbed and discouraged her. In the same way, the patient learns to read the nurse's thoughts, and comes to find out whether the nurse expects her to get well. Hence cheerfulness becomes a duty for the nurse. If she has apprehensions, she must conceal them. Her cheerfulness will be contagious; her brightness of manner will be a tonic to the patient's mind. The nurse who cultivates composure, serenity, daily cheerfulness, a concealment of anxieties, is acquiring an accomplishment which will be invaluable in severe and critical cases.

It is accounted bad manners to "talk shop" among your friends. The acquaintance who is always conversing about his business and his personal affairs becomes an infliction. But if this is true as a general rule, it is particularly true as regards nurses. I have known nurses who in other matters had a good deal of tact, who were inconsiderate enough to regale their patients with reminiscences of all kinds of distressing experiences which had come under their observation. Often the natural association of ideas would lead them to impart their recollec-

tions of cases closely parallel to those of the patient of whom they were then in charge; the result being that, when the patient was left for the night, it would be to have her mind haunted with gruesome and depressing tales of sufferers like herself. It is hardly possible to characterize too strongly such inconsiderate folly; yet I have known excellent nurses, that is to say, nurses excellent in other particulars, to be guilty of it. The most discouraging thing about this folly is that often it seems to be committed in entire unconsciousness.

It is a safe rule for a nurse to follow to talk little, if at all, about her previous patients. If her reminiscences are not depressing, but entertaining, there is a strong probability that the patient to whom she tells them will have an uneasy feeling that she and the affairs of her home may be served up to the next patient with the same freedom. It is a safe rule also for a nurse to refrain from comparing physicians. A nurse soon learns to take the measure of doctors. She knows their qualities, and has a pretty just idea of their ability. She will be called upon to nurse with some doctors for whose skill she has come to have less regard than for others. But unless in some grave emergency, she should keep her impressions to herself. The patient has the same right that she would have, if she were ill, of exercising her own preference as to the practitioner who shall attend her. Nothing, ordinarily, is to be gained, and much mischief may be done, by weakening the patient's confidence in the treatment she is receiving.

How shall the nurse act when con-

fronted with unexpected emergencies? One of the questions which bureaus for the supply of nurses are apt to place considerable stress upon is this: "Is the nurse modest about the assumption of responsibility?" There is danger in either extreme. A doctor of necessity confides a good deal to the nurse's discretion. Certain things are to be done under certain conditions; but if new conditions develop certain different things are to be done. It is possible for a nurse to be too weak and hesitating. On the other hand, she may be too confident in her own knowledge, and may fail to recognize the importance of symptoms, which in some cases would have little significance, but in the particular case under her care stand for a great deal. It is wiser to err, if at all, in the direction of over-prudence than in that of rashness and assumption. If new conditions develop, the doctor should know of them with as little delay as possible. But even in the face of startling changes, the nurse must be calm and composed, else she will certainly demoralize both the patient and the household.

Not only as regards the development of new conditions, but with reference to the ordinary progress of a case, the doctor depends upon the nurse to keep him informed. Some one has said that the ability to see what is before his eyes, and to see it knowingly, is more than half of what makes a successful doctor. The same principle holds true of a nurse. You will be well repaid if you cultivate the habit of noticing closely and recording concisely everything that

happens to your patient. All doctors appreciate this kind of work. It is essential to giving them as complete a picture as possible of the patient's condition. And bear in mind that it is facts that are to be recorded, not your opinions about facts. Occasionally I find the morning report of a nurse reading like this: "The patient slept a good deal during the night, and seems better this morning." Such a report tells me little. If I want to know how many hours the patient slept, and what reason the nurse has for thinking her better, I have to ask. Yet that is precisely the information which the report should have given me. Some nurses do not find this part of their work easy, even after the most careful training for it, and are continually lapsing into such inaccurate slipshod habits of expression as might be expected in an unskilled observer. Strive to avoid this error, and through all your nursing in families keep to the hospital standard of precision and conciseness.

May I say a word as to the nurse's spirit? If nurses are to attain the highest excellence in their work, they must have something of the scientific enthusiasm, leading them to love medicine for medicine's sake, as the true scholar loves learning for learning's sake. Thought of their compensation, also, must be secondary. Among doctors it is pretty well known that the poorest and least desirable physicians, as a rule, are the money-getters. The same principle holds with reference to nurses. This is not to say that the nurse or the doctor should not be prudent; but

with both the desire to relieve suffering and to do good to their fellow creatures should be the impelling motive.

Up to this point, I have spoken of the nurse's work; it is proper that something should be said about the nurse's vacation. While the nurse is in attendance upon a patient she should, for the patient's sake hardly less than for her own, take such intervals for rest and exercise as may be possible without neglecting the patient or causing too great disturbance of the household. I say for the sake of the patient as well as for your own, because you owe the patient alert attention and equable spirits, and no one has these to give who is on a continuous strain day and night. It would be a mistaken idea of devotion which should lead you to disregard your own health and the conditions on which physical strength and mental alertness depend.

But besides this the nurse should try so to arrange her work as to give herself an extended period of complete rest each year. Neither pecuniary considerations nor questions of personal convenience should persuade the nurse to forego this duty. You are entering upon a career. This occupation is not to be a matter of one year or two; you intend it to be a life work. The vocation is an exacting one. Its duties are of a kind which call for elasticity of mind and body for weeks and months at a stretch. You cannot preserve this quality unless you give yourself adequate periods of rest. And the rest should be genuine and complete. It should be taken at a distance from

your patients, and from your usual place of abode; and it should be unencumbered with the thousand and one feminine employments, each of which seems trifling in itself, but which, taken together, may so occupy a vacation as to rob you of half the benefit of it.

Let me hope that I have not perturbed you by the enumeration of the qualifications of the ideal nurse, and of the many and difficult things which are expected of her. The nurse's vocation is the noblest given to women. It is one upon which you may well enter with hopefulness, with a buoyant spirit, with earnestness and with consecration. It will yield you in full measure the highest happiness which enters into human experience — that of helping human need. Nothing marks the advancement of civilization more than our care of the sick. I mean the American care of the sick, which is better and more tender, as a rule, than that which is to be found anywhere else; and I mean the care of the sick by women rather than by men, for it is rare that men have the right touch.

It is a noble company of women into which you are entering. Think of Florence Nightingale, who as a girl visited the hospitals in her pity for the sick, in her young womanhood underwent a course of training in Pastor Fliedner's school of deaconesses, and was qualified when the crucial emergency of the Crimean war arose and wounded soldiers were dying horrible deaths for want of care, to organize and superintend the entire hospital service of the Bosphorus, and to bring hope and healing

to those who were ready to die. Think of our own Dorothea Dix, messenger of relief to neglected paupers and convicts, pioneer in the humane treatment of the insane, and organizer and superintendent of hospital nurses at the beginning of the long and sanguinary civil war. These are but types and examples of thousands of devoted women, who in war and peace, in time of pestilence, in military and public hospitals and in private hospitals, and by the sick bed in the home, have given skilled, unselfish and tender service to the

suffering. Well may the entrance upon such a work and the joining of such a company stir your hearts with high emotions. I hope that you will find strength adequate for your need; that you will be cheered by the appreciation of those for whom you work; that every day may bring its compensations in the feeling that you have relieved suffering and helped those who needed you; and that the career which you have chosen may be as full of happiness of the best type as it certainly is of dignity, self-sacrifice and responsibility.

Abstract of a Paper on Suspensio Uteri.

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I PREFER the term *suspensio uteri* as more correct than any of the various other names in common use, such as "hysterorrhaphy," a plastic operation on the uterus, or "ventrofixation" or "hysteropexy," both incorrect, as the fixation lasts but a short time, the uterus soon after the operation becoming mobile and lying in easy ante-position.

The indications for suspension are a retroflexion which cannot be corrected, and whose symptoms cannot be relieved by non-operative treatment. I always urge the operation where menstrual difficulties, backache, bearing down pain and difficult defecation are persistent.

There is another class of cases not so easily recognized, in which I consider the operation equally important, cases in which the pelvic symptoms, though present and prominent, are apparently secondary, and in which, though the uterus may be sharply retroflexed, the chief complaints are often referred to other organs and the patient is neurasthenic or hysterical. With proper selection much good may be done in this class. By indiscriminate operating nothing but disappointment will follow.

The incision is made in the median line, beginning two to three centimetres above symphysis, and extending upward from three to five centi-

metres, the peritoneum on each side of the incision is caught with artery forceps to prevent it from slipping back and making the closure more difficult, after tying the suspension sutures. The uterus is caught by two fingers hooked behind the fundus and brought forward against the anterior abdominal wall. One side of the incision is then lifted with two fingers, and the peritoneum and subperitoneal fascia are caught up with a curved needle carrying the suspensory ligature, passing into tissue to about a depth of two millimetres, and catching up in the bite a length of about two centimetres. The same ligature is then carried *through a part of the uterus on its posterior face* below fundus, and finally through peritoneum and subperitoneal fascia of opposite side. The ligature is drawn tight and tied, bringing the uterus tightly against the anterior wall. A second suture is now introduced, and if it be thought necessary a third, passing each suture a little above the previous one. The abdominal incision is closed by a continuous fine silk suture, bringing together the peritoneum, one or two buried silver wire mattress sutures through the fascia, and a continuous subcuticular silk suture for the skin. The after treatment is simple. My patients usually remain quietly in bed for two to three weeks, and I caution them about any severe strain for some months.

My report is based on 171 cases

operated on. In this number I have had no death following operation, and in only one case that I have seen has the uterus returned to its old position. I have never seen a hernia following the operation.

At least six of my patients have become pregnant since the operation, and in no one of them was there any extra discomfort during the time, and the uterus in all remained in ante-position after childbirth.

In an analysis of the result of 130 cases within a few weeks after operation, I find that 100 reported themselves as well on leaving the hospital; 26 reported themselves as improved on leaving the hospital; 4 reported themselves as unimproved on leaving the hospital.

The convalescence was lengthened in three cases by transient mania; in three cases by bronchitis; in three cases by a stitch hole abscess; in four cases by dysuria; in four cases by hysterical manifestations; in one case by pneumonia, and in one case by a hemorrhage from an operation for the repair of the vaginal outlet, which was done at the same time.

I do not hesitate if necessary to do other operations at the same time as the suspensory one; as in 16 cases the relaxed vaginal outlet was repaired; in seven cases both tubes and ovaries were removed; in nine cases one tube and ovary; in thirteen cases uterine arteries were ligated; in two cases myomectomy, and in one case a nephrorrhaphy was done.

The Treatment of Inoperable Uterine Cancer.

A CLINICAL LECTURE DELIVERED AT THE SUFFOLK DISPENSARY

BY CHARLES GREENE CUMSTON, B. M. S., M. D.

Instructor in Clinical Gynæcology, Tufts College, Member of the Société Française d'Electrothérapie, etc.

GENTLEMEN:—It has been my sad privilege to show you several patients suffering from malignant disease of the uterus, which had so far developed that a radical operation for their relief was out of the question.

You all know what excellent results are obtained by operation when the disease is seen early. Thanks to the French surgeons especially, vaginal hysterectomy has been made quite simple, and the results furnished by this radical operation are surely as good as can be desired under the circumstances.

Prof. Cushing of our Faculty has met with great success in uterine cancer, in which he performed this operation.

But all uterine cancers are not, unfortunately, in a condition that would justify a radical operation, and this is the case when the neoplasm has gone beyond the limits of the uterus. In order to attain any kind of a successful result, the entire neoplasm must be removed. When this is out of the question the only thing that remains for you to do is to give an anodyne treatment and consider the malignant growth as a *noli me tangere*.

But there are exceptions to what I have just said, and in a certain num-

ber of cases palliative surgical measures are clearly indicated. I now will give you the principal ones: Firstly, you should prevent the occurrence of hæmorrhages, which, as you know, are one of the first symptoms of the disease, and may become sufficiently serious to endanger the patient's life. Secondly, to diminish the hydrorrhœa, which often weakens the subject as much as the loss of blood. Thirdly, suppress the pain—not that produced by the invasion of the neoplasm and which is only controlled by morphine—but that resulting from retention and resorption of the hydrorrhœa. Fourthly, diminish to the greatest possible degree the autoinfection produced by the absorption of the putrid matters retained in the uterine cavity, and which certainly contribute largely in hastening cachexia. Fifthly, reëstablish the flow of urine when one or both ureters have been obliterated by the progress of the growth.

A special treatment corresponds to each one of these indications, or perhaps one treatment may be common to several of them taken together, and it is just these therapeutical measures that I wish to speak of. But, first of all, I will give a general idea of the signs on which you are to guide yourselves, in order to decide

the question as to whether a cancer of the uterus is inoperable or not; whether hysterectomy or amputation of the cervix should or should not be performed.

Now there are signs of value as to indications of operation. When you are in presence of a cancer of the cervix, and nine times out of ten this will be the case, you should examine the vaginal walls in order to ascertain if they have been invaded by the neoplasm. If you do not discover any interruption between the erosions on the cervix and the supposed invasion of the vaginal walls, the cancer has gone beyond the limits of the cervix; but, if there is an interruption, a line of healthy mucous membrane between the cervix and the indurated vaginal walls, you may perhaps only have to do with a vaginitis produced by the irritating discharges from the diseased cervix.

You must be especially careful to ascertain if the anterior wall has been invaded, because in Douglas' cul-de-sac you can, if necessary, remove part of the vaginal wall, while for the anterior wall this is impossible on account of its relation to the bladder.

The first contra-indication to a radical operation in cancer of the uterus is consequently when the growth has directly invaded the vaginal walls, especially the anterior.

The next thing to be looked for is the invasion of the broad ligaments by the disease. Here, too, there are some signs easily recognized, which will, if found, decide the question in the majority of cases. Recent occurrence of pain in the kidneys, extending

down the buttocks on the anterior upper part of the thighs, is a sign that these ligaments are in all probability invaded.

If the uterus is bound down and the cervix immovable, if you find indurated lumps on the sides of the uterus, or simply a hard feel of the broad ligaments, all these signs indicate that there is present a cancerous infiltration of these parts.

Fochier of Lyons has particularly insisted on rectal examination in order to judge of the possibility of a radical operation of a uterine cancer. By systematically making this examination in every case where the patients showed no other sign of generalization of the disease, the above-mentioned surgeon was able to discover a little projection starting from the sides of the uterus and which followed the course of one or both ureters. It is clear that an operation for the entire ablation of the neoplasm would in this case result in wounding the ureters or else leave behind a portion of the growth.

You have still one other sign, which, when it is present, indicates that a radical operation is out of the question: namely, when the lymphatic glands are invaded.

The above are the chief signs on which you can base your treatment. Remember that there is always a possibility of a latent invasion of the lymphatics; but, when you make up your minds that a uterine cancer is in condition to be radically treated, operate completely and without losing time.

As I have shown you, there are

many conditions to treat in cases of inoperable cancer of the uterus, and the measures that have been proposed are as numerous. The most important of these is curettement, which has been put forward by many surgeons, and the results have been frequently really remarkable. This operation is often decidedly indicated.

To perform it, after all antiseptic precautions have been observed, you begin by removing the abundant granulations, which may be so greatly developed as to actually hide the orifice of the cervix, and even the cervix itself.

This you will do with a pair of long curved scissors. While cutting away these granulations you may cut through a vessel of some size, and considerable bleeding may ensue; but this is easily controlled by a tamponade or the application of the thermo-cautery.

When you have removed enough morbid tissue to be able to see the orifice of the cervix you should measure the depth of the uterine cavity with a sound. This simple manoeuvre is frequently quite difficult to execute in a case of cancer, and it should always be done with great care, because the tissues of the uterus being soft from the invasion of the neoplasm, are easily perforated by the instrument.

If the internal orifice is blocked up a progressive dilatation should be practiced in a complete manner, so that curettement of the cavity can be easily accomplished; for it is most essential to be able to attain the fundus in order to remove the diseased tissues high up. Besides, a complete

dilatation will allow you to make the necessary applications to the cavity as well as assuring a good drainage.

But let me impress upon you the fact that this dilatation may be the cause of accidents, such as the introduction of the sound into the peritoneal cavity, rectum or bladder, when these organs are invaded by the growth. It may also produce slight hæmorrhage by rupturing vessels in the cervix; but this is easily controlled.

When you have gained entrance to the cavity of the uterus you should endeavor to remove as much of the degenerated tissues as is possible, even if you are obliged to ligate the uterine arteries. You should continue your work until you find yourselves in the immediate neighborhood of the peritoneum, bladder and rectum. If, by opening the cul-de-sac of Douglas you can remove any unhealthy tissue, you must not hesitate to do so, after which a carefully applied suture will probably lead to a reunion by first intention.

As to the choice of a curette, Recamier's is the one to select, although a perforation will occur more easily with this than with Sims' instrument. When you curette for cancer, the object to be attained is the destruction and removal of all diseased tissue; but you must proceed with much more care than if you were curetting a mucosa for an endometritis.

After curettement the subject will be pretty sure to feel better; and cases are reported in which the growth remained stationary for a number of months. The hæmorrhages and hydrorrhœa often disap-

pear almost completely. When the symptoms, for which curettement was performed return, the operation should be repeated, only this time with still more prudence, because perforation is much more likely to occur.

Curettement will answer the therapeutic indications of many symptoms of uterine cancer. It will generally stop the hæmorrhages, which are the cause of the anemic condition of these unhappy patients; it will diminish the hydrorrhœa, which also weakens the subject, and is also a source of autoinfection, and by rendering the cervical canal patent, the purulent, ichorous discharges are drained away. You consequently can see how much good it can bring about.

There is, however, a contra-indication for curettement, and that is when the subject is extremely weak from loss of blood. When hæmorrhages occur early, appear often, and in great quantity, the disease takes on a peculiar aspect and progresses rapidly. In these patients the complexion has not the yellow tint of cancerous cachexia, but a pale anemic color; and they will complain of tinnitus aurium, syncope and short breath. Death is often the immediate result of the hæmorrhages.

The loss of blood renders the prognosis of the operative measures less good, and before undertaking surgical measures you should endeavor to reduce the hæmorrhages by suitable dressings and put off the operation until your patient has regained sufficient strength to undergo the shock.

Remember that curettement produces profuse hæmorrhage, and for

this reason the operation must be performed rapidly. As soon as the healthy tissues are reached this hæmorrhage will stop. This is especially true of the so-called fungus cancer of the cervix.

We now come to the treatment of uterine cancer by cauterization. The galvanic loop, or Paquelin's thermocautery, are the instruments employed; but the ordinary cautery has the advantage of giving off greater heat, which penetrates into the depth of the tissues. This therapeutic measure is especially indicated in the two following symptoms: Firstly, to stop a severe hæmorrhage when a tamponade is out of the question, being impossible, difficult, or when it does not appear to be sufficient; and, secondly, when for some reason curettement is impossible, or must be postponed on account of the patient's condition.

But generally cauterization is only a part of the operation of curettement, which, when completed, should be followed by cauterization of the tissues, avoiding with care the various important organs in the neighborhood. You must also avoid scorching the vaginal walls by introducing wet gauze, so as to line the canal. The cautery points to be selected vary with each case, although I prefer the blade-shaped end of the Paquelin for general work, as I have found it far more easily handled.

When you cauterize the tissues after scraping with the sharp curette, they will quickly stop bleeding, and the eschar soon comes away, leaving a red and healthy looking surface. Cases of rectal or vesical fistula

have been reported due to the detachment of an eschar, and I mention this so that you will be prudent.

Other caustics besides the cautery may be employed. The chloride of zinc is of all the chemical caustics the best for application in uterine cancer, because its action is not only destructive, but produces sclerosis of the tissue acted upon as well; and when we consider that it is a powerful antiseptic and hæmostatic, you see that it leaves little to be desired.

It is best employed in a strong solution, say from 40 to 50 per cent., and is applied to the cavity by means of tampons wrung out in the solution. You would do well to use the kite-tail system of tampons, as this will greatly facilitate their removal. If the cavity of the uterus is rather small an intra-uterine crayon of chloride of zinc, varying in strength according to the amount of action desired, may be introduced. If you employ tampons they should be removed in six hours after their introduction; with the crayon, you simply leave it to melt; and as this is a slow process the tissues imbibe it as fast as it becomes liquid.

I believe that it is bad practice to attack an inoperable epithelioma of the cervix by anything other than scissors and thermo-cautery, and would advise you never to employ chemical caustics here, not only on account of the risk of their action on the vaginal walls, but especially because it is almost impossible to obtain a direct action on the cervix.

Lactic acid, the tincture of chloride of iron, especially the latter, have been used, but their use is seldom

indicated, and I only mention them in order to show you their comparative uselessness in these cases.

The next question to be considered in treatment of this terrible malady is that of injecting organic or mineral substances directly into the parenchyma of the growth.

Dr. Fafius of Moscow has treated seven cases of cancer of the uterus by intra-parenchymatous injection of a six per cent. solution of salicylic acid prepared with a 60° alcohol. The vagina is irrigated daily with some antiseptic solution for several days preceding the injections, which are preformed as follows: After the cervix has been brought fully into sight, a quantity of from one to four cubic centimetres of the above solution is injected into five or six places in the cancerous mass. An ordinary hypodermic syringe is employed by Fafius, but for this as well as for the other injections of which I am about to speak, I employ Behring's syringe, which holds ten centimetres cube of liquid, which prevents the necessity of being obliged to be continually refilling the syringe, and still more important is that it is an aseptic instrument.

The needle should be pushed into the tissues about a centimetre. The first injection may cause quite an abundant bleeding, but this becomes less and less as the injections are repeated. After each séance, the parts are powdered with iodoform, and the vagina plugged with two or three iodoform glycerine tampons and the patient kept in bed for the remainder of the day.

The salicylic acid injections are

rather painful, but the pain is of short duration. The results of the treatment has been so far quite good, but many more cases must undergo this test before its actual value can be determined.

Professor Vulliet of Geneva and Professor Houffer of Budapesth have recently experimented with intraparenchymatous injections of pure alcohol in uterine cancer, and I myself have been trying it in a case in which the disease was too far advanced to operate on.

The injections are made in the same manner as in the case of the salicylic acid solution, only instead of a centimetre cube, a few drops, say three or four, are injected in eight or or ten different places in the mass, always beginning at the centre and going towards the periphery until healthy tissue is reached, at least the supposed health tissue. If bleeding occurs from the penetration of the needle, you must wait until this has ceased, without withdrawing it, as your alcohol will run out with the blood and will have no action on the tissue.

Houffer uses as much as five grammes of alcohol at each séance, but in my case I followed Vulliet's instructions, and only injected a few drops in each place. If you inject a gramme or so at each insertion of the needle, much of the alcohol will run out and its action is lost, consequently I would advise you to employ the injections of alcohol as I have described according to Vulliet.

The pain produced by the injection of alcohol is not severe and is of short duration. The injections may be

given every day for a week or so, and then you will decrease to twice a week, once a week, etc.

The results by this treatment are most encouraging. My case is rapidly improving locally and her general condition is better. However, it is now *sub judice*, and its real value cannot as yet be estimated. Let me add that phosphated oil (Nepveu) and picric acid (Moran) have also been injected on account of their toxic effects on the cells.

I now wish to say a few words regarding the dressing of cancer of the uterus. When the growth cannot be removed by operation, and when there are no complications demanding urgent treatment, I think with Verchère that a careful antisepsis of the parts is one of the most useful and rational treatments when combined with curettement. When well carried out the terrible foetidity is ameliorated and auto-infection of the patient from the stagnant discharges in the vagina is obviated.

As to the choice of the antiseptic to be employed, it matters little, although those having the least toxicity and the greatest deodorizing power are to be especially preferred. Sulphonaphthol, eucaline or creoline are perhaps the best, and should be employed at the strength of a one per cent. solution.

I have had considerable experience with terebene, and, although I cannot give any explanation as to its manner of action, I can say that it has a most excellent and really wonderful effect on cancerous growth of the uterus. A daily dressing of tampons wrung out with this liquid will

cause healthy granulations to spring up, the hæmorrhages disappear, and the fœtidity as well.

To describe the entire treatment of the disease, when it has produced trouble in the neighboring organs from its invasion, would form a small volume, and in closing this lecture I will be brief on this point. The pains may either be from rectal or renal cause.

The fœcal matter accumulates in the sigmoid flexure, which will be easily discovered by palpation. Besides, the patient will complain of colic, abdominal pain, and tympanism will be present. You may have rectal tenismus, mucous discharges from the rectum, sometimes even mixed with blood, without the existence of a rectal perforation.

In these cases, very often repeated rectal irrigations by means of a soft rubber rectal tube, combined with the exhibition of laxatives, such as cascara sagrada, etc., should be em-

ployed, in order to prevent or overcome retention of the feces.

If their expulsion should become impossible, or if a perforation of the rectum occurs, an artificial anus should be made.

Vesical and renal pains are frequent, and are of grave significance, because they indicate a compression of the ureters against the cervix by the increasing growth of the neoplasm. The compression produces a dilatation of the ureter and a ureteritis, with a resulting interstitial nephritis, from retention of urine.

When the ureter is obstructed, nephrectomy or nephrotomy are naturally out of the question on account of their gravity, but perhaps in some few cases a uretero-rectal or vaginal fistula might be made, which would assure the flow of the urine.

Such, gentlemen, is a short *résumé* of the line of treatment to be carried out in case of inoperable cancer of the uterus.

Vaginal Hysterectomy for Uterine Myomata and Diseases of the Adnexa.*

(AN ABSTRACT.)

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AFTER quoting extensively from letters recently received from Péan, Richelot, Pozzi, etc., giving the statistics of their vaginal hysterectomies and enumerating the indications, he said:

“It will not be contended that vaginal hysterectomy should be an operation of election in all cases of pus pockets in the broad ligaments, tubes, ovaries, or cavities formed by adhesions (encysted peritonitis), for there may be complications involving structures so high above the pelvis

* Read at the Baltimore Meeting of the American Gynecological Society.

that they cannot be reached per vaginam, and without the removal of which the patient cannot be cured,—namely extensive omental or intestinal adhesions and appendicitis. These complications, however, are so infrequent that practically all cases are operable per vaginam.

“As hysterectomy should not, with few exceptions, be performed if the ovary and tube upon one side are healthy, it may be urged that where we cannot positively diagnose bilateral diseases of the adnexa, the diseased structures should not be approached through the vagina. This objection is not valid, because an opening into Douglas’ pouch is practically devoid of danger, and the diseased side may be removed through such opening without disturbing the uterus; and if it cannot, a *cœliotomy* may be immediately performed, and if necessary the vaginal opening left to give more perfect drainage. In cases of *cœliotomy* where a pus sac cannot be enucleated without rupture, a previous opening into the vagina would tend to lessen the mortality, because the pus by gravitation would go in that direction, and by irrigation from above might be immediately forced into and out of the vagina without soiling the peritoneum, or necessitating the use of abdominal drainage by the glass tube or gauze.

“Where it is the correct thing to attempt to separate adhesions of the intestines or omentum, this may be done about as well through the vagina as through the abdomen; but where adhesions are firm and extensive, shutting off pus cavities from the abdomen, it is often the wise thing

to disturb the intestines as little as possible, for they are so arranged that they may cause no subsequent trouble, allowing the gas and fœces to pass uninterruptedly. But if *cœliotomy* is performed in these cases the adhesions must be separated, the peritoneal cavity thereby soiled, probably causing local if not general sepsis; and if the intestines have fortunately escaped serious injury they are left in a condition that predisposes to secondary irregular adhesions, more dangerous than the primary adhesions. All experienced *cœliotomists* are familiar with the fact that in secondary operations in such cases the adhesions are often almost universal and may cause death from obstruction. While the dangers of wounding the rectum, bladder or ureters in vaginal hysterectomy are not greater than in *cœliotomy*, if these structures are injured the mortality in the former is not 25 per cent. of the mortality in the latter, because the perfect drainage prevents peritoneal infection. The bladder or rectum may often be immediately sutured, and if the ureter is injured and cannot be repaired it may be subsequently implanted into the bladder.

“When the tubes and ovaries are removed the uterus can serve no useful purpose, and may remain or finally become an offending member of the body. In many cases where the tubes and ovaries are removed, the woman is not cured and may not be benefitted, but when finally the uterus is removed all symptoms disappear.

“As tubal or pelvic suppuration is frequently caused by continuation of an infection in the endometrium, the

uterus may remain a diseased organ that cannot be cured by curetting or other intra-uterine treatment. In other cases, where the uterus shows no positive signs of disease, the removal of the adnexa does not relieve pain, because the nerves of the uterus or surrounding ganglia are diseased. If the uterus is not removed, even if not diseased, it may become re-infected by fresh exposure, or become displaced and adherent to adjacent structures, or carcinoma may develop. As about 20 per cent. of all cases of salpingitis are tubercular, with probable tubercular involvement of the uterus, the latter organ in such cases should be removed with the tubes and ovaries.

"The following are some of the reasons why vaginal hysterectomy should be preferred to cœliotomy:

"1st. There is less shock and more rapid and complete convalescence, the patients usually sitting up within a week and walking a few days later.

"2d. In pelvic suppuration there is less danger of septic infection from soiling the peritoneum.

"3d. Absence of suture or mural abscesses, and sinuses following the use of drainage or an infected ligature.

"4th. Fewer adhesions following operation.

"5th. Immunity from ventral hernia.

"6th. A lower mortality, fewer post-operative complications, and a more complete restoration to health in a relatively greater number of cases.

"The above are facts as shown by statistics of the most successful operators in cœliotomy and vaginal

hysterectomy; and in vaginal hysterectomy many of the cases were inoperable by any other method.

"It will thus be seen that theoretical objections to vaginal hysterectomy, unsupported by facts and reasons, are worthless when tested by intelligent experience.

"The success of the operation depends upon our ability to control primary and secondary hæmorrhage, to avoid injury to the bladder, the ureters, rectum and intestines, and prevent soiling the peritoneum, all of which may be accomplished by proper attention to the details before and during the operation. In pelvic suppuration, the vaginal incision should first be made behind the cervix and continued at the base of the broad ligaments on each side, one-half inch or more beyond the cervix, and if necessary the posterior vaginal wall should be split to the bottom of Douglas' pouch. Enucleate with the fingers, and if possible open the pus cavities and drain and irrigate them before exposing the peritoneum. This can be done in cysts or suppuration in the broad ligaments, or in other forms of pelvic suppuration where the pus has been shut off from the peritoneal cavity by plastic exudations and adhesions. In these cases the pus may be discharged and the cavities irrigated and disinfected without hæmorrhage or the necessity of using a ligature or clamp. The hysterectomy may then be completed without danger of infecting the peritoneum. I have demonstrated this in cases recently operated upon.

"If the pus pockets cannot be

reached and treated in this way, the peritoneum may be opened and the tubes and ovaries explored with the finger, at the same time introducing a reflux irrigation tube above the diseased structures and allowing hot water to flow steadily, so that in the event of accidental or intentional rupture the pus will be forced into the vagina.

"In operating for myomata the field of operation should be thoroughly exposed so that we may see the tissues we cut. Morcellation should not be attempted until the uterine arteries have been clamped. As morcellation is continued and the broad ligaments are divided, an assistant should make firm and continuous traction with a strong volsella forceps, which is an

efficient means of controlling hæmorrhage. In hysterectomy for broad ligament myomata we should usually morcellate the tumors before we remove the uterus, but when myomata are developed in the walls of the uterus we may morcellate the tumor and the uterus simultaneously as may be indicated."

In conclusion, the author reported some interesting illustrative cases upon which he had recently operated for bilateral pelvic suppuration. These were all unfavorable cases, and some of them not operable by cœliotomy. They all made uninterrupted recoveries, sitting up within one week and walking a few days later.

Puerperal Infection.—Importance of Early Recognition and Treatment.*

J. F. FOX, M. D.

NEW PHILADELPHIA, OHIO.

IN taking the subject of puerperal infection for my paper, I do not intend to mention anything new in particular, simply to present in an appreciable form the latest treatment for this dreaded disease.

I believe there is no accident that can happen to a physician in his obstetric practice that will give him more anxiety and worry and shake his reputation more than the occurrence of puerperal septicæmia in his patients.

There is no doubt in my mind that to many of you, when brought in contact with this disease in the past, the most difficult question to answer, was, "What is the best possible treatment I can give my patient?"

It seems to me that until comparatively recently the profession was very much divided on the methods of its treatment, or at least the disease was treated very differently by different practitioners.

At present, I am happy to say, we are more in unison in our methods for treatment, undoubtedly because we

* Read before the Tuscarawas County Medical Society, held at New Philadelphia, O., April 23, 1895.

better understand the cause of the disease, and hence far better results follow.

I shall not attempt to go into the pathology of the disease, only so far as to give us a clear idea for our treatment.

All writers agree that the presence of pyogenic bacteria in the genital tract is absolutely necessary for the production of the disease, the principal of these germs are streptococci and staphylococci, also others are mentioned by Dr. Ernst that may be concerned in producing the infection.

There can scarcely be any doubt that puerperal infection is at first a local disease entirely; it matters not how the bacteria gain entrance, whether invited by the putrefaction following retained membranes or bits of placenta or by the infected finger or instruments of the attending midwife or physician.

I did not intend to say anything about the prevention of the disease; only next of importance to prevention is its early recognition.

The early diagnosis and treatment is what I should like to hear you discuss. It is a mistake to call it typhoid fever, la grippe, or the like, and treat with antipyretics, thinking our patient is getting better because the temperature does not run so high.

We are taught that any rise of temperature in a lying-in case, that can not be accounted for in any way, must be of septic origin.

Suppose a woman for one or two days after confinement has a suspicious temperature of 99° to 100°; suddenly takes a chill, with temperature of 102° to 104°; anxious expression

of face and a rapid full pulse; possibly a sensitiveness over the uterus; the parts have increased heat; the cervical canal is wide open, and there is a foetid order to finger as it is removed from vagina; the lochia are frequently entirely suppressed; an energetic treatment in such a condition is indicated.

A careful examination is now necessary to make sure of our diagnosis; pneumonia, and trouble with the breasts due to fissured nipples, must be carefully eliminated.

An acute indigestion or intestinal disturbance often produces a rise of temperature, but no chill; a saline cathartic will soon correct this; an old imprisoned abscess or pus tube might by the recent confinement be inflamed anew and produce septic symptoms.

If there is still an uncertainty about the diagnosis, several hours could be allowed to pass, not giving an antipyretic to misguide us; if the temperature is no lower there can no longer be any doubt as to the real nature of the trouble.

If we agree that the disease is produced by pyogenic germs, we will also agree that it is at first a local disease; it is in fact an acute septic endometritis. We will further agree that the sooner these germs are removed from the uterus and vagina the better it is for our patient, because the tissues will not be involved so deeply and the germs will consequently have less chance to enter the circulation.

It cannot be denied that wounds of perineum, vagina or cervix when they become infected, may produce

fever; according to Dr. Bumm the infection usually remains local, the germs do not travel far beyond the margins of the wound, these wounds are therefore of subordinate importance in the treatment of puerperal infection.

When the interior of the uterus is invaded an entirely different state of affairs is brought about. It seems to be a fact that occasionally pieces of placenta or membranes are retained in the uterine cavity, a rise of temperature follows, which if invaded only by bacteria of decomposition, germs of less virulency than the streptococci or staphylococci, the case is not a true infection, simply as Dr. Bumm calls it, "a putrid intoxication." The fever in these cases usually comes on more gradually and somewhat later after confinement, and is produced by the absorption of the products of decomposition; a rapid decline of temperature follows the removal of these putrid masses with antiseptic irrigation, usually no further treatment is required.

If the diagnosis is once established that we have a puerperal infected uterus to deal with, it is our duty to give it a careful curetting and packing with iodoform gauze at once, if we intend to give our patient the best chance for her life, according to our present knowledge of treatment.

There may be different methods for cleaning out the uterus; frequent or constant irrigation have good results follow, however not as satisfactory as curetting, and is far more annoying and exhausting to the patient; the usual method for doing the curetting is briefly as follows:

The patient is placed on a table with a Kelly pad or an ordinary rubber cloth under her hips; an anæsthetic should be administered if she is sensitive; usually no anæsthetic is required as the os is generally sufficiently dilated for doing the curetting; the operation must be done thoroughly aseptic, soap, hot water and mercuric bichloride solution, one to five thousand, should be freely used on the outer parts and the vagina; a perineal retractor is now introduced and the cervix brought into view; a constant stream of bichloride solution should be kept flowing over the parts.

It is very important to irrigate the interior of the uterus with bichloride solution or sterilized water before curetting. By so doing we move all loose particles of decomposition and prevent a possible new absorption of septic matter by the denuded surface subsequently made by the curette. This can be successfully done by using a long glass tube, slightly bent several inches from the end, or a catheter made for that purpose. Great care must be taken so there will be no hindrance to the outflow of the fluid; the entire endometrium is next thoroughly but carefully curetted with a sharp curette; there is no danger in this, if as Dr. Goffe says, "pressure is only applied with the drawing motion of the curette." The dull curette should never be used; it simply bruises the tissues and so hastens absorption; a peculiar grating feel is imparted to the curette when the diseased and softened tissues are removed and instrument comes in contact with the more or less firm muscular layer of the uterus.

An irrigating curette is probably the best instrument for cleaning the uterine cavity. When we feel satisfied that all has been removed, the uterus is again irrigated with bichloride solution and loosely packed with iodoform gauze; the vagina is dusted with iodoform, and also packed with gauze. The drainage when introduced in this manner will insure complete drainage; usually the fever will entirely disappear. In thirty-six to forty-eight hours the gauze is removed.

Should in some cases the temperature remain above 101° the uterus should be irrigated every few hours with sterilized water once or twice a day, with 1 to 5000 bichloride of mercury. All wounds in vagina or cervix be dusted with iodoform.

Dr. Ill reports fifty cases treated in above manner with only one death. In that instance it seems treatment was too late. She had had a high temperature for one week. I have only a few cases of my own treated in this manner, several of them previous to full term, all with good results.

An accident that may occur in these cases is a perforation of the fundus by the curette, especially if the ordinary size is used. A broad curette should always be used, and great caution taken when curetting the fundus. Several cases of perforation have been reported. However, as far as I can ascertain, there were no fatalities on account of the perforation.

There are some who will say they have seen patients get well without

such heroic treatment. That is true; but they will also remember that their deaths far out-number their recoveries. In the cases that do recover we see a lingering convalescence; they are ematiated and pale looking, frequently requiring months for a recovery, and at times never regain their former health.

The curetting, if properly done, positively hinders no patient from getting well. On the contrary it produces a speedy and more perfect recovery.

Since we cannot tell in the beginning which cases are going to recover by what might be called a conservative treatment, it seems to me far more rational to put them at once on the above described treatment, and not delay until it is too late for any treatment to be of any avail. Sustaining and stimulating treatment should be kept up from the start. Simply treating the symptoms as they come up, as is sometimes done, is bad and should not be practiced. Opiates and antipyretics should never be used. They simply cover up the true condition and are of no benefit whatever. The ice bag on the abdomen is always agreeable to the patient and usually relieves all the pain that is present in those cases, also prevents to a great extent inflammatory invasion of the peritoneum. By lowering the temperature we do not cure our patients. We should remove the cause. It is not that kills; it is the septic infection that does the damage.

A Few Cases of True Pelvic Cellulitis.—A Plea for More Thorough Pelvic Surgery.

(AN ABSTRACT.)

ELY VAN DE WARKER,

SYRACUSE, N. Y.

IT is not many years since, under the stimulus of what was then called progress, that the term "pelvic cellulitis" was denied a place as a condition of disease. It was regarded as a phantom, the product of half knowledge if not of ignorance.

After holding absolute sway as the leading factor in pathology of the female pelvis, according to the best authority of the time, it was deposed and actually driven out of respectable literature by the pelvic surgeon. By the fingers of the laparotomist it was demonstrated beyond all doubt that what had been frequently regarded as an inflammation of the cellular connective tissue was but an adhesion of near parts due to an inflammatory exudate, or a disease of the tubes and ovaries, while the cellular structure remained intact. This condition was found so frequently that the existence of collections of pus in the pelvic connective tissue was regarded as rarely, if ever seen, and that such collections of pus were in the fallopian tubes, or in peritoneal spaces shut in by adhesive exudate, or designated by the collective and uncertain name of "pus sacks."

All scientific men must admit that this was a true advance, and that a vague and erroneous theory of pelvic

inflammation was overthrown. It is positively a fact that the term "pelvic cellulitis" was used in a most unscientific and even ignorant way. By it was explained all forms of pelvic adhesions, exudates and pelvic fixations and masses not evidently due to neoplasms. This was cleared up by the pelvic surgeon. It was the revolt of the man of facts against the despotism of the man of theory. But to one who used facts as a mental search-light after truth it was but the exchange of one form of despotism for another, more arrogant and aggressive than the first.

The pelvic, tubal or ovarian extirpator was intolerant of the very term of cellular inflammation. Peritoneal and tubal disease simply took the place of cellular disease as the one and ever present agent of pelvic inflammation. Here the salpingotomist after all his triumphs rested, and became, like the theorist whom he displaced, an obstacle to advancement. Established error gave way before the logic of the facts that he had demonstrated. Had he stopped there the advance would have been born without a regret, but he did more. He obliterated the very idea of cellular inflammation as a cause of pelvic disease, and brought the term

under such contempt that one who had regard for his reputation as a scientific man and a safe diagnostician among the body of the profession, hesitated to admit its possibility.

After the performance of untold thousands of pelvic sections for the cure of pelvic inflammatory conditions, a vast number of which must have been useless and harmful, the more observing among this group of surgeons became aware of the fact that many of their patients were not cured, and were even made worse. Among them were numerous cases where enormous tubal accumulations clearly indicated the operation. Masses of adhesions reformed and uterine fixation recurred, or was not relieved.

After vaginal hysterectomy became well established and a comparatively simple operation, the mysterious obstacle in the way of success was supposed to be the uterus, and the more advanced surgeon proposed in cases where tubal and ovarian disease demanded extirpation, to remove the uterus also, as the really offending and now useless organ.

The facts of the pelvic surgeon had also lapsed into theory as narrow as the one that he had displaced, and equally at fault as an explanation of the total phenomena of pelvic inflammation. There are evident indications that the crude operation of tubal and ovarian extirpation, as a general operation in pelvic inflammation, is becoming obsolete, and that the future line of surgical relief will come

from the direction of the hysterectomist.

The reaction began to revive the old idea of pelvic cellulitis. It was the old theory, but seen in a new light. It was a crystalization out of the mass of crude logic and obliquely observed facts of the old authors; but it is now a well defined and scientific term. We know what it is as well as what it is not. Limited in this way, it is a positive advance in our knowledge of pelvic inflammation, and broadens the etiological factors of pelvic disease. * * *

One of the misfortunes of surgical specialism is to develop a tendency to mental restriction. One cannot live, think and act in a narrow purview for years without limiting one's mental perspective. It is a matter like this that appears to have entered into this question. The pelvic surgeon seems to have ignored the possibility of any wider area of pelvic inflammation than that which attacks the peritoneum, the tubes or the ovaries.

This was the status of pelvic pathology through a period of splendid surgery, and of which, I believe, we are beginning to see the decline. Here and there a pelvic surgeon (as some of those who make a specialty of exploring the pelvis through an abdominal incision, wish to be called), became awake to the fact that there was another pelvic morbid entity than peritoneal adhesions, sacculated tubes, cystic ovaries and pus sacks, and that notwithstanding the thorough

and aseptic removal of these conditions (and no one with any experience can doubt the propriety of the operation,) the patient did not get well. The pain, the neurosis the pelvic fixations and the disability continued in full force. Several surgeons who candidly admitted these negative results in published articles, and recommend uterine extirpation, which I do not hesitate to admit was a proper conclusion, reached it, in my opinion, upon false premises. They accused the most inoffensive organ in the female pelvis, unless it be the seat of malignancy or of neoplasms, namely, the uterus, of being the offender. It is true that it had become a superfluous organ, and also true that some prompt recoveries followed its extirpation after tubal and ovarian operations. I believe that the failure to cure after the primary operation was due to an associated pelvic cellular inflammation, and not to the fact that the uterus was left intact.

In my public and private practice I have had abundant material and have operated liberally and have been often disappointed. Some of the conditions found were very misleading. Enormously distended tubes, ovaries incarcerated in masses of exudate and adhesion, omental and intestinal, and uterine adhesions appeared to account for all the condition of the patient, though removal of the offending conditions and prompt recovery from the operation failed to relieve the patient. But this method was tedious, lacked precision, exposed the patient to the

danger of secondary infection, and was too limited in its action.

I have always been found in the ranks of the conservative pelvic surgeons, but I became convinced that we did not go far enough, and that the uterus ought to be removed. Not because it was diseased, but by the removal of the organ we opened up the cellular pelvic spaces and secured the necessary drainage to relieve the cellulitis. Hysterectomy, in my opinion, affords the only route to this area of intra-pelvic inflammation.

I am also convinced that it is hysterectomy of a certain kind. Preferably it is through the vagina, but it is not the operation by ligation, but by the forceps or clamp. It makes a wide difference whether all the spaces are occluded and surfaces brought into contact by sutures and inclusive ligatures, or are left open to free drainage by the removal of the forceps, which secures this result by the retracting tissues. The French method is now developing along this line, and, if we are correctly informed, with brilliant results.

If I am asked, ought this method to be practiced in all cases, I emphatically answer no. We may have pelvic peritonitis with its resulting evils without associated pelvic cellulitis. We may have many forms of tubal disease imperatively demanding operation, unattended with inflammation of the pelvic cellular spaces, and we may have the latter without the former.

What I am contending for is a

scientific recognition of the various forms of inflammation, and I believe that we may reach a reasonable differential diagnosis, not in all cases, for I have a profound respect for the difficulties of pelvic diagnosis by palpation. But in very considerable number we may come to a safe conclusion. I have a simple diagnostic sign, and when I find it I feel very sure of the presence of cellular inflammation. In this tissue, pelvic or elsewhere, inflammation may extend by continuity into any part made up of like histological elements. We have inflammation in the broad ligament, extending into the iliac fossa laterally and downward through connective tissue spaces into the vaginal septum and through the pubosacral areolar process to the lateral surfaces of the vagina. (Savage.) In these locations the infiltrated cellular spaces can be brought up between the finger in the rectum and the thumb in the vagina as thickened indurated and doughy masses. This condition may extend downward an inch or more, it may extend to the lateral surfaces of the vagina, disappearing to the touch above the limits of the passage, and shows on palpation as a slightly

elastic mass, firmly fixed to the pelvic wall, smooth and glistening, the vaginal rugæ obliterated. I have observed that these lateral extensions reach downward farther than those situated in the recto-vaginal wall, reaching in some instances nearly to the vestibule. This condition is a true cellulitis and indicates and is concurrent with cellulitis higher up in the pelvic space, but is not associated with pelvic peritonitis or salpingitis or oöphoritis.

While this vaginal cellulitis has been described, I have not seen it referred to as an index of the character of the primary pelvic inflammation. Unless existing in a very marked degree it cannot positively be detected by vaginal examination alone, but by combined vaginal and rectal palpation. We must remember, however, that there is no reason why pelvic peritonitis and cellulitis may not co-exist. Having this possibility in view, the symptom I have just described could prove the inter-currence of cellular inflammation.

When this is well established I believe that thorough surgical treatment requires hysterectomy as well as the older operation of removal of tubes and ovaries.

A Further Study of Certain Phenomena Observed in the Sudden Arrest of Lactation, and in the Treatment of Inflammation of the Nipple and Breast by Bandaging and Rest.*

PHILANDER A. HARRIS, M. D.,

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HAVING long been convinced that the nursing child may be taken from the breast at any stage of the gland's functional activity, and that we may at the same time refrain from every means of withdrawing the secretion without detriment to the mother or child in either the normal or inflammatory conditions of this organ, it has been my custom to bandage the breast, and rest from nursing for the following conditions:—

First.—After every still-birth, or sudden death of the nursing child, and in instances where it was decided that the child's interests would be better subserved by artificial feeding.

Second.—In every case of mastitis, in which, when first seen, I was unable to discover the existence of an abscess.

Third.—In all cases of sore nipples which were not yielding to treatment, but advancing to a condition in which the child was unable to withdraw the secretion, or the mother too sorely pained by its efforts at nursing.

From my obstetrical records of private and hospital maternity practice, I find that I have employed bandaging and rest altogether in about eighty-five cases. About thirty

of these belonged to the first group above referred to, and were consequently treated for the permanent arrest of the functional activity of the glands. The remaining fifty-five cases, with one exception, had living and nursing children, are included in the second and third groups, and consequently presented some grade of inflammation, either of the nipples or breasts, or of both.

In no instances in the first group did inflammation or abscess result. The glands usually attained their maximum degree of distention on the fourth, fifth or sixth day following delivery, and afterwards rapidly softened, shrunk, and returned to a condition of normal inactivity. In about two-thirds of them the secretion drained from the nipples more or less freely during treatment. In the remaining one-third of the cases there was little or no drainage from either breast. In a very few instances only one side drained during treatment. In all cases the draining was observed to rapidly diminish as the glands softened and shrunk, and almost without exception had entirely ceased before the breasts had resumed their usual size.

As to the results of treatment in the second and third groups, and comprising fifty-five or more cases of

* Accompanied by six photographs and a table of cases.

inflammatory troubles of the nipples or breasts with nursing children, three developed abscess during treatment by bandaging and rest. In one of these the child was re-applied and a fairly abundant secretion recalled and maintained with advantage and satisfaction to both mother and child.

In one other instance efforts to induce a small and prematurely born child to nurse resulted in failure, and on the fifth day after birth the greatly distended breasts were both bandaged and rested to effect a cure of inflamed nipples. When the nipples had healed and breasts softened the child was re-applied; it again persistently declined to nurse and had to be fed. It afterwards thrived by artificial feeding.

In the remaining fifty-one or more cases the breasts were bandaged for periods varying from four to twenty-four days. Nursing was suspended for periods varying from one to sixteen days, and the functions of secretion and nursing afterwards fully recalled and maintained with the effect of curing the local inflammation in every instance, and without injurious effects to mother or child.

I have histories showing the more important features of twenty-four of these cases, from which I have arranged the accompanying table to facilitate examination, comparison and study. Unfortunately the remaining twenty-seven or more cases included in the second and third groups are without sufficient data to entitle them to a place in the table.

Proceeding more particularly to a study of the conditions and changes as they appeared in the twenty-four

histories here given, I find that in ten cases bandaging and rest was begun on the third, fourth or fifth days after delivery; that in five instances it was begun on the sixth, seventh, tenth or eleventh day after delivery, with an average of about five and three-fourths days for eleven of the cases. In seven cases the apparent necessity for bandaging and rest developed between the fourth and sixteenth weeks after delivery. In the remaining two cases the trouble for which treatment was instituted arose at the fourth and eighth months respectively after delivery. In only five instances did chill and fever precede bandaging. In ten instances bandaging and rest was practiced for the cure of inflamed nipples alone. Eight cases were treated on account of reddened and inflamed breasts. Only two of these were without sore nipples at the beginning of treatment. Sore nipples had, however, in both cases preceded the mastitis. In only six instances was there present the double condition of an inflamed nipple and a reddened breast when first bandaged.

TEMPERATURE.

Unfortunately there appears no record in five of the cases. Four of the five cases without record were examples of inflamed nipples, with distention of the breasts and more or less inability of the child to nurse. The remaining case—No. 1 in the table—had severe pain in the breasts, followed by chill. In four cases no elevation of temperature was discovered. Fourteen cases presented febrile movement, attended by a max-

imum temperature varying from ninety-nine and three-tenths to one hundred and three degrees, and probably due to the local inflammations in most instances. Case No. 6 is excluded from consideration here because the high temperature was doubtless the result of an abscess already developed when admitted to the hospital.

DRAINAGE.

In eight instances there was no drainage from the nipple. In four there were slight drainage. Twelve drained more or less freely.

SENSORY PHENOMENA.

In every instance there was marked relief or entire cessation of pain after bandaging. In two cases anodynes were given for one day. In one case two doses of morphia were given. In three cases a single dose of morphia was given. All the other cases were either free from pain after bandaging or were quite comfortable without anodynes.

THE MAXIMUM DEGREE OF DISTENTION

in one instance was attained in twelve hours; in eight instances, the first day; in nine instances, the second day; and in five, the third day, the average time for all cases being less than two days.

THE PERIOD OF REST FROM NURSING.

The average period of rest from nursing was about seven and a quarter days. The shortest rest was two days; the longest, sixteen.

THE TIME REQUIRED TO FULLY RECALL THE FUNCTION OF SECRETION

varied from two to ten days, the average time being six and one-seventh days.

BANDAGING CONTINUED.

The average time for the retention of the bandage was thirteen and one-third days. The shortest employment was seven, and the longest twenty-four days.

CONDITION OF THE OTHER NIPPLE AND BREAST.

In five cases the other nipple was sore, and both breasts were rested. In four cases the other nipple was sore, but healed during the continuance of nursing. In one case—No. 19—the other nipple became so inflamed that it had to be rested from the date of cure of the breast first attacked. It is entered in the table as No. 20. The function of the breast first affected was resumed, while the other nipple was rested until healed. In none of the other cases was there appreciable difficulty or inflammation of the other nipple or breast, excepting in case No. 6 of the table, which entered hospital with an abscess.

THE CHILD.

While nursing only from the well breast the child was generally also fed. In one or two of the cases where the young infant was taken from the breast it resumed nursing with great reluctance. The child almost always offered some objection to nursing from a rested breast, but

the reluctance was generally easily conquered by a little starvation. In no instance did any child which had nursed before resting positively decline to aid in recalling the secretion.

In the treatment of the inflammation of the nipple and breast by bandaging and rest I have been most forcibly impressed with the general uniformity of results. Pain, discomfort and temperature generally diminished upon the application of the bandage and the consequent enforcement of rest. Cases which did not drain at all appeared to improve quite as rapidly as the larger number which drained to a greater or less degree. In no instances have I observed in the same lactation a return of the inflammation in the breast after the first attack. I used to fear the child would sicken with the first nursing following rest, but in no instance have I observed this result.

METHOD OF BANDAGING.

The six accompanying photographs illustrate the method of bandaging. A medium quality of unbleached muslin roller, from two to two and one-half inches in width, and from sixteen to twenty yards in one piece is required.

The patient's comfort may generally be enhanced by placing a light covering of surgeon's cotton over the breast and underneath the bandage. If the breasts are very heavy, and the patient out of bed, I often pad the shoulder, as shown in photographs "D" and "E".

Photograph "A" shows the manner of lifting the breast at the first step of bandaging.

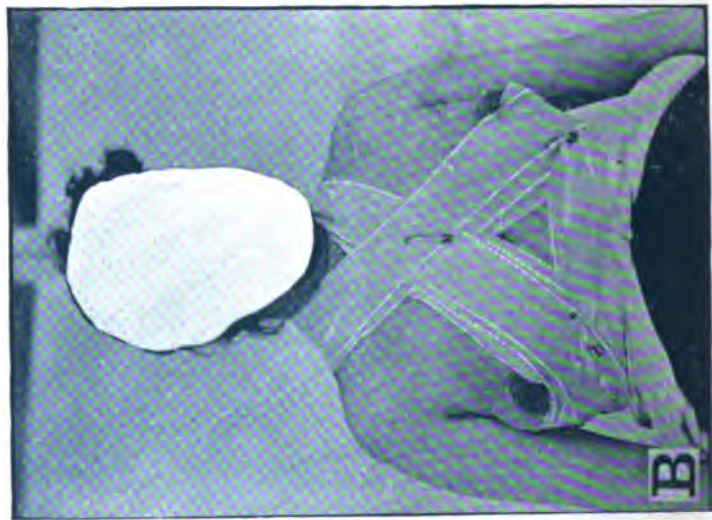
Photograph "B" shows the usual manner of bandaging while recalling the secretion.

Photograph "C" is the back view of "B."

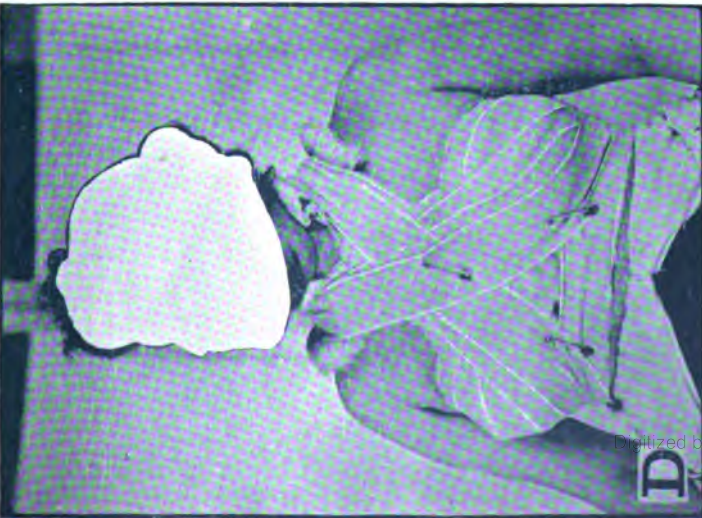
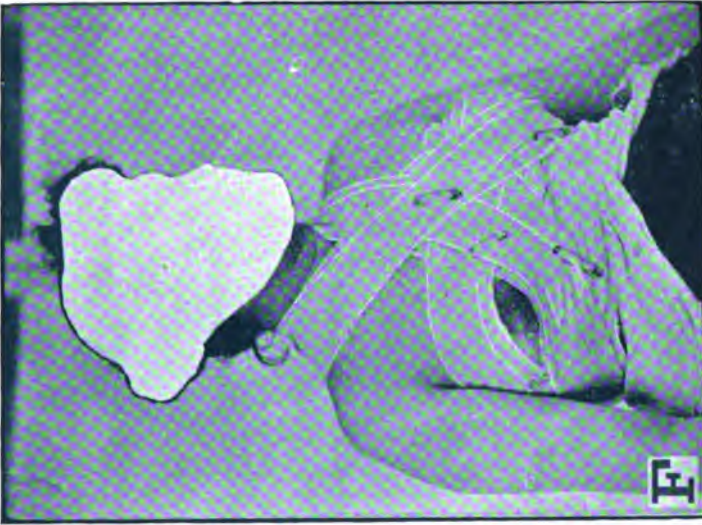
Photograph "F" shows the manner of covering one nipple for rest while exposing the other for nursing. A small safety-pin in the converging layers of bandage at either side of the nipple is used to prevent displacement of breast or bandage. Aside from these two safety-pins, six large ones are sufficient to retain the well-applied bandage for many days. Pins are required only where the bandages cross and converge, and should be made to include as many layers of the bandage as possible.

I have not employed heavy pressure, nor have I deemed it desirable. On the contrary I have sought to lift the gland slightly, and at the same time secure, so far as practicable, light and equable pressure. In a few instances the added pressure arising from an increasing accumulation of the secretion has occasioned pain a few hours after the first bandaging, from which it has appeared that the first bandage should have been applied with less lifting and also less tension. In bandaging, caution is required lest with each succeeding turn of the roller we effect too much lifting and compression.

A breast which is the seat of abscess may be gently lifted, as shown in photograph "B," with the effect of affording some relief from pain, but if fully bandaged, as shown in photographs "D," "E," or "F," the pain would be increased, especi-



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PHILANDER A HARRIS, M. D. See page 754.

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ally if the compression is considerable. In the inflammatory cases I have employed this method of bandaging almost to the exclusion of other forms of breast-hinder now so much used in certain "maternities." It possesses the following advantages:

It effectually lifts the breasts, and thus lessens pain or discomfort.

It exerts somewhat equable pressure on the breasts to any degree desirable.

It conceals the nipple of the diseased organ, preventing any interference on the part of patient or attendants between our visits without our knowledge or detection.

It constantly exposes the nipple of the well breast to the child, thus avoiding any adjustment of the bandages before and after nursing.

The roller bandage, however, cannot be well applied unless the patient is able to sit erect during its application. This would form a serious objection to its use with those who enjoin their patients to maintain a strict recumbent position during the first week following delivery. I generally require my puerperal patients to assume the sitting posture during urination and defecation, and their heads are generally kept well in balance, so that they easily maintain the erect sitting posture during application of the bandage.

From these observations of the breast in its various conditions of functional activity, and in disease, I am led to the following conclusions:

1st. That the breasts soon after delivery are strongly disposed to secrete milk, and will usually continue to do so for a few days, even if

they be not nursed. If no attempt be then made to nurse or withdraw the milk, the secretion rapidly diminishes and they return to their normal size and condition of inactivity.

2d. That, as a rule (to which there are probably few if any exceptions), the retained secretion does not undergo changes which convert it into an irritant fluid, but, instead, it remains innocuous to the walls of the ducts and acini which contain it, and under favorable conditions is finally absorbed without trouble or embarrassment to either the normal or inflamed adjacent tissues.

3d. That, as a rule, the secretion of milk continues only while the natural stimulus, as nursing or other means of emptying the breast, continue to be employed. That the secretion, either in the normal or inflammatory condition, begins to abate when such stimulus is withdrawn and will entirely cease after a week or two.

4th. That an abundant secretion of milk which has recently and entirely ceased, as a result of a complete withdrawal of stimulus, may be again recalled upon the application of the child.

5th. That the presence of a decided inflammatory movement in the breast greatly diminishes secretion in the gland.

6th. That the sympathetic relation between the two breasts is almost, if not wholly, a sensory one. That neither the function of secretion nor the condition of the circulation in one breast is appreciably and directly affected by either physiologi-

cal pathological processes which may be going on in the other.

Inflammation of the breast should be regarded as a progressive rather than a self-limited disease, arising in most instances from septic infection of the nipple. It is attended by a train of pathological changes which become more severe and complicated until the conditions or circumstances which have produced them, and which favor their continuance, are abated or removed.

The inflamed breast, or the breast of an inflamed nipple, should be supported in a well-applied bandage, and no attempt made to nurse or withdraw the secretion until the entire subsidence of the inflammatory movement.

Sore and fissured nipples often produce serious inflammation of the breast. If, therefore, in any particular case we have reason to believe

that the lesion will soon lead to the development of mastitis, or should it appear that a cure of the nipple cannot be effected during the continuance of nursing, we shall be justified in the entire suspension of suckling through the affected part until a cure of the local trouble is established.

The well-applied bandage exerts a salutary influence on the morbid conditions which affect the nursing breast, and it is also a most grateful measure of treatment.

If the reader will kindly compare these conclusions with those which closed my first paper upon this subject, and to which this is supplementary, he will find that the additional and very considerable experience of ten years has not led me to make any material alteration or amendment to the original claims in this relation.

26 Church street., Paterson, N. J.

SOCIETY PROCEEDINGS.

The Obstetrical Society of Philadelphia.

A stated meeting was held May 2, 1895, the President, Dr. WM. H. PARRISH in the chair.

DR. G. BETTON MASSEY reported a case of a

LARGE OEDEMATOUS MYOMA TREATED BY ABDOMINAL ELECTRO-PUNCTURE.

This patient was married but never pregnant, forty-five years of age. Ten years before coming under observation had first noticed an abdominal tumor, accompanied by menorrhagia. When seen in 1891 there had been no flow for two years, but the tumor was rapidly growing and becoming softer. General health poor.

The growth extended to four and one-quarter inches above the navel; circumference of abdomen, thirty seven and one-eighth inches; mass soft and semi-fluctuating; general appearance that of pregnant uterus at term. Uterine canal, however, was only three inches deep. An aspirating needle passed through the abdominal wall entered several small cavities in the uterine wall apparently, and about an ounce of serous liquid was obtained and submitted for examination to Dr. Allan H. Smith, who considered the fluid as probably from a broad ligament cyst. A consultation was asked and refused, as the patient dreaded operation. On testing the growth with strong galvanic currents, temporary hardening and shrinkage was produced, indicating the myomatous character of the growth. Gal-

vanic puncture by the abdominal method was decided upon.

The insulated needle was passed through the abdominal wall into the growth and then connected with the negative pole of the battery, current 65 milliamperes. This was done on three occasions in two months, and supplemented by external applications. The growth at this time had been reduced two inches, and the upper limit of tumor was only two inches above the navel.

From September, 1891, to March, 1893, nine punctures were made, increasing the strength from 100 to 300 milliamperes, during which a continuous decrease in size was noted. At the last visit six months ago, the tumor was the size of a large orange and there had been restoration of general health.

Discussion.

Dr. GEO. ERETY SHOEMAKER.-- I would like to ask Dr. Massey in what way he determines whether there are adhesions or not, between intestine and the growth, or to the abdominal wall, before making abdominal puncture. It is the experience of most men that such adhesions cannot be detected by external examination. If there should be such adhesions, the puncture must be fraught with considerable danger. There is another point to which I will allude; I do not see exactly how the doctor made out his diagnosis of soft myoma in this case. The result

of treatment by electro-puncture is unusual, and I call attention to the fact that the soft myoma is the very form of tumor which, in the experience of other men, this treatment has been proved to be useless.

Dr. MASSEY.—With regards to the safety of abdominal electro-puncture, I recognize the possibility of incarceration of intestine across the top of the tumor as a danger which is always present, from what the surgeons tell me. Some years ago I was told by Dr. Emmet that in cases where he had made up his mind that there was nothing of the kind, on opening the abdomen he had found extensive adhesions. However, I have made now 150 such punctures and have never had any evidence of having had this happen. It is quite possible that I may have passed through a loop of intestine, but I would not like to do it intentionally. It must be remembered that the needles are insulated, except near the point, and there would be no electrical action except in the tumor around the point of the needle. My own opinion is that by careful manipulation, with the aid of percussion, the puncture could be made at a point where the bowel is not adherent. A condition of flatulence would render the diagnosis of the bowel from the non-adherent portions of the tumor possible.

With regard to the nature of this growth, I would say that the improvement under electricity is no proof that it was not a soft myoma. I agree with the statement that it is generally held to be so, and I would state that this is the first case of the kind which I have treated. This tumor had the consistency which soft myomas generally have; indeed, it was semi-fluctuating rather than soft. It was not until I began using the stronger currents externally over the tumor that I observed the mass to grow hard,

and it remained so for half an hour after the applications. After finding it respond to both currents I became convinced that it contained muscular fibre, and that the diagnosis of myoma was correct. In making this electrical test, I used two large electrodes, one placed on the front and the other on the back, and not only did the tumor go down under the application, but it remained so for several days afterwards.

Dr. GEORGE M. BOYD read a clinical report of

TWO CASES OF TUBAL PREGNANCY,
OPERATED UPON MORE THAN A
MONTH AFTER PRIMARY RUPTURE.

These cases apparently showed the value of a temporizing policy, as they did not die of primary rupture of the tube. Cœliotomy was only resorted to several weeks later to remove the diseased tubes and partly organized and encapsulated blood, which was then causing local and reflex symptoms.

In a considerable proportion of cases the hæmorrhage is not sufficient to cause very alarming symptoms, and in the opinion of the reported cases of early ruptured tubal pregnancies are often not recognized as such, and are treated symptomatically. The majority of such cases, however, will fall into the hands of the surgeon eventually, suffering with the results of inflammation and a foreign body in the abdomen.

The first case, thirty years of age, had missed a period four months before coming under observation, and a month later had experienced sudden pain in the abdomen after some exertion, and had fainted repeatedly. She was unable to extend her thighs for several days on account of the severe pain. She remained in bed several weeks, the swelling of the ab-

domen and pains gradually subsiding. She subsequently resumed her work and was about the house for two months. At this time she complained of rectal pain, which was found to be due to a tumor pressing upon the bowel. It was posterior and to the left of the uterus. On section being performed the tumor was found to be a partly organized and encapsulated clot of blood which nature had endeavored to shut off from the general cavity. The left tube had been disorganized and showed a perforation. The patient made a good recovery.

Mrs. B., thirty-six years of age, applied March, 1895, for repair of pelvic floor. Multipara; last child born eleven years before. Stated that she had lacerated perineum followed by procedentia; she had undergone an operation of amputation of the cervix uteri five years since. Six weeks before coming under observation she had sudden pain in left ovarian region, which however was not of long duration, and she did not consider it of much gravity. Upon examination under ether the uterus was found fixed, and there was a tumor to the left, and cœliotomy was advised and performed. General bowel and omental adhesions were encountered; in rupturing these the finger of the reporter tore open a tumor, posterior to the uterus, walnut-sized, filled with a partly organized blood clot and encapsulated by surrounding structures. The right ovary made up a portion of the capsule, and being diseased was removed together with the other. Patient rapidly recovered.

Dr. Boyd believed that these two cases showed that the classical symptoms of tubal pregnancy do not always present themselves. Nature is not equal to the removal of even moderate hæmorrhages by absorption,

and does what is next best, attempts to shut off the mass from the general peritoneal cavity.

The value of verifying a diagnosis by careful examination under ether was demonstrated in the second case. The history did not lead to the suspicion of the condition which was found. In all cases in which there is an element of doubt in a case of pelvic tumor or inflammation, a routine examination under ether is advisable before proceeding to any operative interference. The value of the information gained renders the loss of time involved of trifling import.

Discussion.

Dr. GEO. E. SHOEMAKER.— There is a question always in the mind of the surgeon in these cases of ruptured tubal pregnancy, and that is what will become of the blood-clot which is known to have escaped, and which is completely surrounded by the tissues of the body. In other situations in the body we know that the blood will be absorbed and completely disappear, as for instance after a dissecting aneurism. If the amount of blood be large it will be likely to produce an abscess. My own experience with blood effusion in extra-uterine pregnancy has been in three cases. The first one was that of a woman who presented the symptoms of rupture, but refused operation for a time; as she was steadily going down she consented and got through safely. The second case had been treated for acute peritonitis by enormous doses of morphia. When she came into my hands she was at death's door, profoundly septic and depressed. I found a large tumor in the abdomen, reaching nearly to the umbilicus, and owing to adhesions to the small intestine the tumor was completely incarcerated. This formed a sac con-

taining thin blood, and the whole mass of the intestines was included in the sac wall; the wall being about three-fourths of an inch in thickness. The whole belly was affected, peristalsis was difficult, and it was a wonder that fatal obstruction of the bowel did not occur. This illustrates what goes on in the abdomen in cases of large effusion of blood; the bowels, the bladder, and all the organs are so hampered in their functions that they cannot act and cannot get rid of this blood. Miracles happen and some of these cases recover, but most of them die. The third case was in the hands of another man; in that case the pressure was sufficient to cause gangrene around the sac.

Dr. WM. H. PARRISH.—The special question for discussion seems to be the changes which occur in the effused blood in extra-uterine pregnancy, and what ultimately becomes of this blood. This has an important bearing, especially in managing such cases.

Dr. CHAS. P. NOBLE.—I did not hear the paper, but as I was entering the room I heard Dr. Shoemaker refer to a case such as is frequently met with. I have no doubt but that in most of the cases of blood effusion in extra-uterine pregnancy the blood is absorbed. Most of us admit this. The question yet to be decided is what is the percentage of these cases? After the blood is absorbed the surrounding parts form adhesions with the ovary, and I could support this by cases which have suffered from these adhesions. The last case referred to by Dr. Shoemaker shows that we may have gangrene as a result of ectopic pregnancy. This case I operated upon, and the whole left side was gangrenous, and the entire left broad ligament was gangrenous. That patient had general septicæmia and it is needless to say

did not recover. I reported this case to the Society during last winter at one of the meetings. I have seen a number of cases in which, in my opinion, had extra-uterine pregnancy, and the blood was absorbed. A considerable number of cases of what are called hæmatocele are due to extra-uterine pregnancy, and we have only to look at the literature to know that a certain number of these cases recover. My own experience is that if operated upon they generally recover. Every one of my cases recovered except the one with gangrene; so that in cases operated upon the danger is almost *nil*. We must balance this result with the danger of subsequent trouble from adhesions of the broad ligament on that side where the rupture occurs. So while I admit that these patients may recover, I must balance this with the statement that they suffer from subsequent adhesions.

In contrast with the above are those cases of rupture in which the blood is effused into the general abdominal cavity and does not form a hæmatocele. In these cases the hæmorrhage is generally from large vessels and the patients nearly always die. I have operated upon three cases and these patients all died. One woman had an abdomen enlarged to the size of the last month of pregnancy, and this patient died of the loss of blood previous to the operation.

There is yet another class of cases which I have operated upon, in which there is considerable blood in a sac and also considerable blood in the abdomen. These cases are of an intermediate kind. In these cases there has occurred intermittent hæmorrhage, and the explanation is that the cases have had time to recover between the successive hæmorrhages. In the intervals the blood-making

organs have had time to make fresh blood to replace the loss, and the proportion of red blood corpuscles in these cases is much greater than in ordinary extra-uterine pregnancy.

This is the way I look upon it: Some cases will recover even without operation, but if operated upon they will be relieved from adhesions to ovary and tube, which they would have if not operated upon.

Dr. M. PRICE.—In my opinion there are three distinct conditions in extra-uterine pregnancy to which the operator is called: (1) Primary cases with free hæmorrhage from pretty large vessels; (2) Cases where hæmorrhage has taken place under the peritoneum and is nearly encapsulated, and there is very little free blood in the abdominal cavity. These are also nearly acute, and in the course of two or three weeks they attain their full development. (3) There is another class of cases like those which Dr. Boyd has reported. They constitute a class which is frequently brought to our notice; but in proportion to the time they are allowed to go on is the danger greater to the patient. The operation is not difficult. The intestines can be separated readily by tearing the adhesions, and the ovarian sac can be readily removed, and the patient saved. I do not remember seeing any one of them which have died. But these are just the kind in which the blood has taken on retrogressive change and may form abscess, especially if they have been tampered with, so that the patient not only suffers from the loss of blood but also from poison in the pelvis. It has been my custom in these cases to only open the sac and remove the placenta and tube and leave the remainder of the sac in position to protect the peritoneum, and for this reason: as soon as you take away or attempt to remove the sac you infect

the whole peritoneal cavity. Moreover, the separation of the adhesions requires such a long time that it would unduly extend the operation, which would expose the patient to unnecessary risk, so that I would expose my patient to additional danger and diminish her chances of recovery. I lost one a few weeks ago in the fourth month after abortion, where the blood clot had become disorganized; and if it had not been for a blood clot and cyst there would have been a question as to the cause of the trouble. That case I lost because I set out to enucleate the sac from the pelvic organs. These are the cases we ought to save, and I hold that we should save them all.

I disagree with Dr. Noble in the treatment of severe cases, where the patient seems at her last gasp. I think that they should be operated upon promptly. I recall two cases in which Dr. Cordier of Kansas City helped me, both of whom were in desperate condition. During the operation one of them gave a little cough, and the blood spurted nearly to the ceiling, and she was without pulse. Dr. Hare has given the explanation of the pulseless condition of these extra-uterine cases; it is due to the pressure of the blood in the hæmatocele. This is proved by the fact that as soon as the pressure is removed the pulse returns. The operation is the simplest in uterine surgery. In primary cases, every day that the operation is delayed only increases the amount of danger. As regards recovery, I believe it possible; they recover in the same way that a man comes into a hospital with a crushed limb and refuses operation, and, after suffering for months, finally recovers. The surgeon will tell you that for every man that succeeds in saving his limb there are ten who will lose their lives; for when one

recovers ten others will attempt it and fail because they have not the strength.

I believe that every case of extra-uterine pregnancy should be operated upon, and that it is our duty as surgeons to operate upon every such case that comes into our hands. I remember two cases in which rupture occurred; they were clear cases of extra-uterine pregnancy, and without operation I would have said that they would not live forty-eight hours. Many cases of this kind are called peritonitis and all sorts of things, without their true nature being recognized.

Dr. G. BETTON MASSEY.—The great danger in these cases is from primary rupture and its consequences. The patient is dying probably before she comes into the surgeon's hands. It seems, therefore, that the surgical operation is of very secondary consequence. It is what the patient's condition demands, and is done to save life. When the patient is not seen at the time of rupture and survives it, the danger is not great, as these specimens show. The conclusion of a previous speaker that all cases should be operated upon would mean that those who would get well without it would be subjected to operation as well as those who would not, and that the operation in the former is justified from the point of view of the health of the patient rather than her life. I hardly think that he presented both sides of the question with entire fairness. He spoke of what would become of the tubes and ovaries after the blood was absorbed and, on the other hand, the almost entire certainty of recovery after operation; I hardly think this a fair presentation of the case. We should not forget that the operation also has its pathological effects, and cases that I have seen show that

these effects should not be ignored. These cases I constantly see at the clinic, some of whom have been before us, who complain of pain and functional disorder, and go on from operation to operation without permanent relief. I recall a young girl, twenty-three years of age, who had had three operations for impaction of the bowels from adhesions following an abdominal section.

Dr. NOBLE.—I would ask Dr. Massey how many cases he has treated of operations for tubal pregnancy; in other words, whether his remarks apply to tubal pregnancy or to abdominal surgery in general?

Dr. MASSEY.—I do not know what the cause of the original operation was in most of the cases; but in the case of the girl I refer to, the first was for removal of an ovary, the second for removal of the uterus, and the third was for adhesions and obstruction of the bowels. The cases I referred to were cases of obstruction of the bowels following the operation, coming under my notice, in which the result was due to similar conditions.

Dr. M. PRICE.—I think that I would like to call attention to the question raised by Dr. Massey, whether or not these hæmorrhages are recurrent and whether we should operate for the first hæmorrhage or not. There is always danger as long as the placenta remains, for as long as it retains vitality it will bleed. I have known a placenta to bleed for months afterwards. The first principle is to operate to save life and close the source of the hæmorrhage, which is draining away the life of the patient. Secondly, if there is blood effused it should come away. We hold that the operation is necessary to preserve life and to procure health. When there is no evidence of any disorder in the pelvis, and nothing to indicate that the patient is suffering

from any local condition, of course, no one would operate, and the woman may have passed through several such attacks before symptoms appear for which she applies to the surgeon for relief. If she has adhesions to the tubes or ovaries causing pain and disorder, no matter what has been the cause of these adhesions, tumor, gonorrhœa, or anything, she should be operated upon for their removal; but in ruptured tubal pregnancy it is first, last, and all the time blood, blood, blood, which is going to kill our patients unless relieved by operation.

Dr. GEORGE M. BOYD read the report of

A CASE OF DOUBLE TUBO-OVARIAN ABSCESS, THE PEDICLE LIGATURE COMING AWAY BY THE BLADDER.

The case, a negress, twenty-six years of age, single, had been suffering with ovarian pain for more than a year. For two weeks had had a bloody vaginal discharge. The uterus was fixed, and on either side was found a mass painful upon pressure.

Agglutination of omentum and bowel required unusual length of external incision. After much manipulation an extensive tubo-ovarian abscess was removed from each side. A sterilized gauze drain was used on account of venous oozing, removed partly on second and entirely on third day, when the abdominal wound was sutured and patient recovered and left the hospital. Eleven weeks after operation she passed a mass of silk ligature during micturition. Very slight vesical irritation was caused by its passage.

Discussion.

Dr. GEORGE E. SHOEMAKER.—I would ask whether in the original operation there was particular diffi-

culty experienced in separating the bladder from the pedicle of the tumor, and whether in Dr. Boyd's judgment the ligature was not passed partly through the wall of the bladder. It seems to me very unusual that a ligature should select the wall of the bladder to pass through in escaping from the abdomen; but if the needle had taken up the wall of the bladder it might pass through afterwards with comparative ease.

Dr. CHARLES P. NOBLE.—I am glad to see this ligature, as it emphasises a point which has been referred to many times in the discussions before this Society during the winter. In the first place it is a large ligature, and in the second place the ends are cut rather long, and it is for these reasons that the ligature came away and not because it was silk. I have used silk ligatures in all my cases of abdominal work, and the percentage of ligatures that come away is about one per cent. I believe that if we use a silk ligature with the ends cut off short it will give much better results than if the ends were left comparatively long. I always use the double knot lest the knot should become untied. I have also been in the habit of re-inforcing my ligature by one through the top of the broad ligament. In my operations this winter in removing the uterus I have taken the precaution to use a double ligature in securing the uterine arteries. Where there is a raw oozing surface the peritoneum can be stitched over and over so as to make a connected surface. This is one of the most useful of applications, as it covers up a large oozing surface or denuded spots, which ordinary methods of dealing with hæmorrhage fail to control.

Dr. B. F. BAER.—I believe with Dr. Noble that the ligature used in this case of Dr. Boyd's was too heavy, and the ends were too long for the

safe encystment of the ligature in the usual way, but that does not explain why it came away through the bladder. The bladder wall must have been caught in the ligature.

Dr. Noble stated that he removed the uterus the other day simply to control bleeding. It seems to me that this is an extreme measure; why would not deep ligation of the broad ligaments or ligation of the uterine arteries have been sufficient? I have never found it necessary to remove the uterus simply to control hæmorrhage. I do not believe in the prevalent doctrine that when the appendages are removed the uterus should be removed also. It is an unnecessary mutilation and an additional danger, for the percentage of mortality in hysterectomy is a little greater than that of ovariectomy.

Dr. M. PRICE.—That ligature was entirely too large and the ends were too long. The whole difficulty in my mind is just this: if you tie a figure of eight knot, which crosses over at the spot where you have your hæmorrhage, the hæmorrhage will not occur one time in a thousand from the uterine side, but it comes from the outer side near the ovary. In ninety-nine cases out of a hundred you will find the bleeding vessel to come from the ovarian artery.

Now, after denuding and taking off a large part of the peritoneum, I say how much of this large surface can you cover by Dr. Noble's method? You can't cover two inches. Now, why you should take out the uterus when the hæmorrhage is from the ovarian artery, I can't understand. Our plan is to tie the ovarian artery early and get it out of the way. For these cases I used a twisted silk ligature, which has been twice scalded, the twist is taken out by the scalding and the strands of silk are put around the vessel and tied with all your

might, which buries the ligature and favors its becoming encapsulated; within an hour it is hermetically sealed, and, if it is a clean ligature, it will not go through the bladder or anywhere else. If you use a large ligature you will have an infected ligature and it will make a sinus. You may close the wound, but one day the ligature comes out. If you use a small ligature and tie it tight it will not be heard of again.

Dr. NOBLE.—In reply to Dr. Baer, I would state that I am not in favor of removing the uterus in all cases where the ovaries are removed. I have taken ground against this on several occasions; but where there is hæmorrhage occurring from the ovarian arteries I have said that it is better to take out the uterus. I would ask Dr. Baer if, in a case with hæmorrhage from both sides of the pelvis, he would tie both uterine arteries and then turn and tie both ovarian arteries? If so the condition of the patient would be rather a bad one. This was the method I followed in several cases, and the patients have made good recoveries; where there is oozing deep down in the pelvis it is my plan to remove the uterus and have all four vessels tied.

In reference to tying the ovarian arteries for oozing deep down in the pelvis, I think that it has no influence whatever, and think it much better to have it entirely arrested before closing the belly. I have adopted this course in a number of cases.

As regards taking out the uterus and covering the raw surface with peritoneum, Dr. Price has not done this; but by putting the patient in the Trendelenburg posture there is no difficulty, and I conclude, as he has not done it, that he does not know how nicely it can be accomplished.

In tying ligatures it is not neces-

sary to use a figure of eight or like knot at all. Dr. Kelly has not used it for several years. There are no large vessels on the ovarian side, and a ligature applied near to the uterus and one to the outer portion of the broad ligament are sufficient; we can leave the middle of the broad ligament, as there are no large vessels there to bleed.

Dr. PARRISH.—Nothing has been said about the influence of gauze in causing the discharge of the ligature. My own experience has been that the use of gauze packing will prevent materially the encapsulating of the ligature, and will lead to its coming out of the pelvis in some way or other.

Dr. BOYD.—In answer to Dr. Shoemaker I would say that adhesions were very extensive, and it is possible that some of the coats of the bladder may have been involved in placing the ligatures, and it seems to me that this is the explanation, probably, of the unusual course which the ligature took in escaping from the body. With regard to the size of the ligature used, it seems much larger now, after remaining in the pelvis and bladder for some time, than it was when used. It certainly looks much larger to me than it did then.

Dr. B. F. BAER made a

bladder case I remember perfectly, because he abused me for cutting into the bladder, and I went to see him operate and he cut into the bladder; and I understand he cut into another in the same week.

Dr. WM. H. PARRISH.—I would like to ask Dr. Baer if in any of his cases he found it necessary to reopen the abdomen, or if blood accumulated above the vagina or elsewhere during the after-treatment of these cases?

Dr. BAER.—In reply to Dr. Noble I would say that I have had just such a case as he refers to within two months, and I expected to have presented the specimen this evening, but I found after opening the jar that it was not there. The patient, aged 28 years, with one child five years of age, became ill about a year ago with pelvic inflammation and abscess. The physician in attendance opened through the vagina, evacuated the pus and drained. The patient got apparently well, or rather, improved and got about. She then, following the usual course, had a second attack, which was very much worse than the first one. When I saw her, ten weeks ago, she was exceedingly ill with general pelvic suppuration. The whole pelvis was filled and the cervix crowded up and forward behind the pubic arch. The abscess had opened into the bowel two or three weeks previously, and had since been discharging pus freely by this channel. An operation was advised and she was brought to the hospital. I opened the abdomen and found that a recent hæmorrhage had occurred and filled an old abscess sac. I then suspected that extra-uterine pregnancy existed as a complication, but microscopic examination since made does not confirm that view. The cavity was quite large, and was lined with a pyogenic membrane. The tubes and ovaries were riddled with

PRESENTATION OF SPECIMENS.

Discussion.

Dr. CHAS. P. NOBLE.—I wish to congratulate the society upon having one member who has such great luck; I am sure that if any of us except Dr. Baer had such great oozing and did not make any provision for its arrest our patients would have died. I am quite amazed at the result which Dr. Baer has had in these cases and in closing up an old pus case without drainage. The

sinuses. I did not look for the sinus into the rectum. I would have done so some years ago but not now, because I have learned from experience that nature can take better care of such a condition unaided than by my meddling interference. This patient went home on the nineteenth day. I irrigated, but did not think for a moment of putting in a drainage tube.

I have operated upon a number of cases where pus had been draining into the rectum through a tortuous sinus for a longer or shorter period before the operation. I irrigated in all of them, but did not drain, and every patient recovered.

I would choose rather to omit drainage where there was an opening into the bowel, because the presence of the tube only helps into the formation of a fœcal fistula, and interferes with nature's process of repair. I learned that fact some years ago in a case in which the late Professor Agnew was associated with me. Pus was discharging from a tubo-ovarian abscess into the bowel. We operated and placed a glass drain, watching it carefully. The patient recovered with a bad fœcal fistula. I afterwards, with the assistance of Dr. Agnew and Dr. White, tried to close the opening into the bowel, but could not reach it because of its deep pelvic location. The patient lingered for three months and finally died of septic pneumonia. In another case of intra-ligamentary cyst, in which the bowel was denuded, I placed a drainage tube. Two days afterwards, fœcal matter began pouring through the tube.

I was so horrified, having the case just related fresh on my mind, that I got my brother, who was then a medical student, to come with one of his fellows to aid me, and we quietly, four days after the operation, put the

patient on the table and re-opened the abdomen. I now learned something which opened my eyes to the irritating effects of a drainage tube. I found a large mass of lymph surrounding the tube and entirely shutting off the peritoneal cavity, so that it was draining nothing but the bottom of the tract, where it had produced an opening into the previously denuded bowel. Nature was endeavoring to get rid of the drainage tube, and had thrown this wall of lymph around it for that purpose. I removed the drainage tube and tried to close the opening in the bowel, but failed to reach it because it was too deep. I then closed the abdominal wound, expecting the patient to die; but, thanks to the *vis medicatrix nature*, she has recovered, and went home four weeks afterward. The fistula closed later. I have always felt sure that if I had not used a drainage tube in that case the patient would have made a smooth recovery. From that time on I gradually used drainage less and less, until I finally dropped it almost altogether. I have drained very little during the last seven or eight years, and I believe my percentage of mortality is as low as that of my friends who drain more, and I have far less trouble, and my patients are more comfortable and have fewer unpleasant sequelæ. The lesson I have learned about fœcal fistula, and which may be useful to my younger friends, is this: leave the case to nature, and the fistula will close, as a rule.

The president asked whether I had ever found it necessary to evacuate a collection of blood which had formed after the incision had been closed without drainage. I reply: In not a single instance that I can recall have I found it necessary, where there had been adhesions. I have, however, in two instances of simple hysterectomy,

where there had not been a single adhesion, found it necessary to evacuate a collection of blood from the broad ligament below the point of ligation. These were cases of what Tait describes as broad ligament hæmatocele, and of which he, some years ago, reported eighty cases. I believe that if we were to examine all of our simple ovariectomies, even a day or two after the operation, we would find a thickened broad ligament, the result of oozing below the ligature. These effusions are rapidly absorbed, and as a rule they give no trouble. Occasionally, however, absorption does not rapidly occur; then there will be rise of temperature and slow convalescence. I repeat that the only instances in which I have found it necessary to evacuate blood, were in two or three cases of blood ligament hæmatocele, but never from bleeding, the result of separated adhesions.

SPECIMENS FROM CLINICAL CASES.

1st, an undeveloped horn from a double uterus; 2d, an ovarian cystoma; 3d, tumor of the broad ligament.

Dr. B. F. BAER presented a specimen taken from a young girl nearly twenty years of age who had suffered with attacks of intense dysmenorrhœa, not beginning at puberty, which occurred about the usual age, but beginning two or three years later. The pain was especially referred to the region of the right ovary, and it came on after the menstrual flow appeared, continuing for several days after the discharge ceased. It became more severe with each recurrence; she described her suffering as frightful, causing her to make all sorts of outcries on account of the excruciating pain. The pains were always on the right side and always of the same peculiar character. The symptoms were those of hæmatoma

of the ovary, and this had been the provisional diagnosis. Upon making an examination he found an infantile cervix, a small os, and an infantile uterus deflected to the left. On the right side, high up, was this tumor, which was a little higher than the ovary, but it was unusually difficult to feel, which was attributed to the fact that she was a virgin. The diagnosis of hæmatoma of the ovary was confirmed, and he advised its removal, which is the only treatment for this condition. She entered the hospital and the former diagnosis was apparently sustained by a second examination under anæsthesia. He dilated the uterine canal, which was found to be a small one, and curetted the uterine cavity, previous to an abdominal section. After making the section he discovered the tumor immediately below the lower part of the incision. It looked and felt like a fibroid, but on bringing it up it was found to be more like uterine tissue. It was traced to the ovary and was found to be attached to it, and the fallopian tube was seen to be attached in a peculiar way; it lost itself in the broad ligament on one side and on the other ended in the uterus proper. The only thing to think of was an undeveloped horn of a double uterus. This was an extremely interesting condition, which he had never before met with. He removed this tumor with the corresponding ovary. An incision into it revealed a cavity which had some fluid in it, as if it had been menstrual blood which had undergone change. The explanation of the pain was now evident; there was an effusion of blood into this cavity in the little uterus, but there was no connection with the other uterus and the blood could not get out. As the other ovary was very small he removed it also. The patient made a very nice recovery.

In connection with this imperfectly developed uterus he exhibited a diagram representing a condition found in a girl about fourteen years old, who had begun to menstruate eleven months before he had seen her. The diagram showed a blind vagina, also a small cervix, with a pin-hole opening in it, and here is a larger cervix, with a normal sized opening into it.

The history of the case is this: The girl, at fourteen, began menstruating with some pain. The next month she had more pain and did not flow very much. She had increasing pain each month. After the eight or ninth month she noticed a small tumor on the right side, and a month latter a large tumor was found on the right side in the inguinal region. Several who examined the patient were of the opinion that it was a case of retained menstruation. Dr. Baer made a vaginal examination under ether. There was some bulging at the right side of the vulva; at the side of this swelling the finger passed into a vagina, at the termination of which he found a cervix. The patient had a double uterus and a double vagina and menstruated from both. The lower extremity of one vagina was closed, but there was a small opening near its upper part from which a small quantity of the menstrual secretion escaped. There was a uterus and vagina with atresia on the right side, and a uterus and normal vagina on the left side. In this case he divided the partition between the two vaginas with the scissors, up to the fundus. The case also made a good recovery and had gone home.

The next specimen presented was one of ovarian tumor. It illustrated the perfect folly and danger, and crime almost, of delay in removing such growths; but on the part of the patient this time and not of the

doctor in attendance. The patient was known to have this tumor five years ago. Dr. Goodell at that time advised her to have it removed, and from time to time since then the same advice had been repeated; but it was not followed. Nearly five years afterwards the reporter was importuned to go a considerable distance into the country to operate, but he refused, and directed her to come to the city in order that she might have proper preparatory and after treatment, which she did and came to the hospital. On examination he found the bulk of the tumor to be very large; the abdomen was distended as if she had in it a fifty pound tumor. The section was made, and a large tumor found; there was not a spot of the surface of the tumor which was not adherent. At the lower part of it there was found what appeared to be the bladder, but was a tumor. In manipulating the growth he ruptured a cyst, from which shelled out a mass of cheesy material. The belly was full of ascitic fluid, which he did not measure. Lower down than the previous mass he came in contact with another tumor, which was an enlarged uterine horn. The patient was very weak, and he did not feel justified in going on to remove the uterus, with the ovary which was the site of the original growth, which had undergone cheesy generation. Although the uterus was still large she made a nice recovery. This case illustrates the criminal folly of delay. He maintained that wherever a tumor is found it should be removed; because if it does not give symptoms it will eventually, and it will not go away of itself. If he were to accidentally find a tumor in the abdomen in making a section, he should remove it, because it ought not to be there.

The third specimen was one of

intra-ligamentary tumor. The attachments of the uterus and the growth was shown in the fold of the broad ligament. It extended down to the vagina and had the characters of a fibroid tumor, which it proved to be after removal. The tumor might have been removed and the uterus left; but upon considering the matter he did not think it wise in this case to leave it. The uterus was on top of a pretty large tumor, which was evidently within the broad ligament; in removing which, he commenced ligating on the right side, and after tying the uterine and ovarian arteries and the upper portion of the broad ligament, he cut through the broad ligament down to the cervix. He probably had also cut through several branches from the uterine artery, but they gave no trouble, and in fact it was about the easiest operation that he had ever done as soon as he began to shell out the tumor, leaving the layers of the broad ligament open. After removing the tumor he dropped the pedicle of the broad ligament into the pelvis, and closed the abdominal wound absolutely without drainage and no gauze. He said that he had only been guilty of packing gauze into the pelvis once in his ex-

perience, and that was sufficient. It was a wonder to him that gentlemen who advocate packing gauze into the pelvis do not learn similar lessons from their experiences. He closed up the wound as he had often done after removing abdominal tumors, and never had any misgivings as to the result, or anything but a feeling of comfort afterward. The other case that he had just referred to was one of fibroid growth, in which there had been several electro-punctures, and the contents of the abdomen had become infected and the effusion had become purulent in character. The tumor was very large, and he was somewhat frightened by the large size of the venous channels upon its surface. There was considerable bleeding during the operation, and for hæmostasis he packed into the wound sterilized balls of gauze. Immediately after they were removed the patient seemed to be dying. As he did not want her to die on the table he quickly tied a compress and pad on the abdomen and had her removed to her own room. She afterwards got perfectly well, and nine months afterwards looked so well that he scarcely recognized her.

REVIEW OF GYNÆCOLOGY.

INCONTINENCE OF URINE IN WOMEN, TREATED BY THURE BRANDT'S METHOD.

Dr. Narick who brought six cases before the Obstetrical Society of Paris (November, 1891; November, 1893; May, 1894), gives two more successful cases. In one case, aged forty, the trouble persisted after the reposition of an adherent retroverted uterus, and keeping it in position by a Schultze's pessary. The nights, especially, were much disturbed. Three applications cured the patient, and after six months she was still free of her troubles. The other case was in an old woman, aged seventy, suffering from valvular disease, whom he found in a pestilential atmosphere, owing to her incontinence. Three massages cured her for a fortnight, when a violent cough from influenza caused a relapse. Three more sittings cured her again, and she was free when Dr. Narick saw her a month later.

The method is simple. The greased index finger is pushed up to the level of the vesical sphincter, or a little higher, and moved from right to left five or six times, at the same time pressing against the posterior surface of the pubis. The massage is slightly painful.

It seems to deserve a trial.—(*Revue des Maladies des Femmes*, June, 1892; July, 1894.)

CAVERNOUS ANGIOMA OF THE OVARY. By DR. MARCKWALD.

Marckwald, in making a *post-mortem* examination on a girl of

twenty-two, who had been affected with general tuberculosis, found in the centre of the right ovary a cavernous angioma. The ovary was as large as a walnut. The left one was normal. The appendages were not tubercular.

He finds only two cases previously described. One observed by Orth and Stamm, was that of a child in whom both ovaries were affected. The other was a case described by J. F. Payne, in which both ovaries were affected, and also the uterus, liver and supra-renal bodies.—(*Virchow's Archiv.*, vol. cxxxvii., July.)

WO ENDIGEN DIE GARTNER'SCHEN GÆNGE? (Where do Gartner's Ducts end?) By Dr. R. KOSS- MANN.

UEBER DIE GARTNER'SCHEN (WOLFF- SCHEN) GÆNGE BEIM MENSCHEN (Gartner's Ducts in Men.) By Dr. W. NAGEL.

An unnecessarily angry controversy between Dr. Kossmann and Dr. Nagel seems at last at an end.

Kossmann defends and tries to prove the opinion that Gartner's ducts are identical with Wolff's ducts, that, therefore, where they remain they open into the sinus urogenitalis between the urethral orifice and the introitus vaginæ; that, as a rule, they mostly obliterate, but that in some mammalians, and abnormally in man, the obliteration of a part may not take place, and that, therefore, we may in the human female find their remnants in the anterior vaginal wall down towards the urethral orifice.

Whether Skene's ducts and cryps are such remnants, Kossmann cannot yet maintain. (*Centralbl. Gynæcol.*, 1894, No. 19.)

Nagel seems to prove by his and other excellent researches that Wolff's ducts have no part in the growth of the vagina, which proceeds from the lowest points of the united Müller's ducts. He confirms by his dissections the views of Skene, v. Köllicker, Dohrn, Schüller, v. Ackeren and Overdieck, that the para-urethral ducts are efferent ducts of little acinous glands or diverticles of the mucous membrane of the urethra. Such sprouts of the epithelium which subsequently become hollow, have been observed by Ackeren and Schüller in early embryonic life.—(*Centralbl. f. Gynæcol.*, 1895, 2, 1894, No. 42.)

VEGETATIONS OF THE INTERNAL AND EXTERNAL GENITALS IN A PREGNANT WOMAN REMOVED BY OPERATION. By DR. MARTIN GIL of Malaga.

A married woman, in the eighth month of pregnancy, consulted me on account of warty growths, which I found on examination, extended from the os tincæ, involved all the folds of the vagina and the carunculæ myrtiformes, were most exuberant on the mons veneris, branching and overlapping each other, so that not a hair was left, and thence extended to the perineal raphe, the inguinal folds and the thighs. In view of the obstacle these growths would necessarily form to the dilatation of the collum uteri, vagina and vulva at parturition, I counselled their immediate removal, though not without some fear that the exploration, pain, and unavoidable hæmorrhage attending the extirpation of such abundant growths, might induce premature labor; the

fœtus was, however, already viable, and was smaller than it would be at term, while the vegetations would, if not removed, increase considerably during the remaining period of gestation. The operation was a most laborious one, especially in the vagina; externally I extirpated freely, checking the copious hæmorrhage by touches with acid nitrate of mercury. The patient recovered in twenty days, and at term was safely delivered of a strong and healthy child.—(*Gaceta Médica Catalana*, No. 14, 1894.

ON SOME OF THE LESS COMMON DISEASES OF THE VULVA. MR. J. W. TAYLOR (Birmingham), has some suggestive papers under this title in the *Birmingham Medical Review* for October, November and December.

(1) *Syphilitic elephantiasis of the vulva*.—This is an intractable form of syphilis of the vulva, often spreading to the perineum and anus. The clitoris and labia minora or majora are transformed into enormous and heavy ball or flap-like folds of tissue. These are not influenced by anti-syphilitic remedies, and although at first free from actual ulceration, may mechanically (by chafing or otherwise), become excoriated in patches. There is more or less constant discharge, and a warty growth may spread all over the perineum.

The patient complains not only of inconvenience and soreness, but often of pain, which is then very severe. Mr. Taylor gives notes of two cases which he had treated by the only available method, namely, amputation. In the first case the clitoris and right labium minus were involved, and the result was quite successful. In the second case (of which an illustration was given), besides hypertro-

phy of the clitoris and of both labia majora, there was an extensive warty growth, irregular and fissured, extending over the perineum and passing around and beyond the anus. The latter was difficult to find, and much of the function of the sphincter had been lost. The warty growth was dealt with by removal with scissors and cautery down to the level of the healthy skin. The patient's condition was greatly improved.

Mr. Taylor distinguishes between tropical elephantiasis of the vulva and the syphilitic condition, and points out that the latter may, nevertheless, not yield to antisyphilitic remedies.

This form has not been clearly recognized by English writers, but has been described in all its essential features in German text-books. Schröder seems to have been the first to recognize the necessity for operative treatment. Dükerssen writes: "The cases which I have seen occurred exclusively in persons affected with tertiary syphilis. Antisyphilitic treatment is of no use; the treatment consists in excision."

When the clitoris and labia minora are alone affected, the operation is easy, and the result is usually very good. When the labia majora and nates are also affected, the treatment is more difficult. Taylor recommends the excision of a long wedge-shaped piece of tissue from each labium, together with the removal of the hypertrophied outgrowths down to the level of the true skin. This is attended with great relief to the patient, but in the worst cases can hardly be regarded as curative.

THE AGE OF PUBERTY IN RUSSIA. By Dr. GRUSDEFF.

Grusdeff has gathered information

regarding 10,000 women from different parts of Russia.

The average age in those of Teutonic origin is 15.14 years; in Polish, 15.40; in Russian, 15.75; in Esthonian and Lapp, 16.19; in True Finnish, 16.27. The average for all Russia is 15.74. Among the richest classes the average was 14.87. In town middle-class women, 15.33. In peasant women, 16.15. It is earliest among the southern and latest among the northern peasants. In 1 case puberty commenced in the 9th year; in 4 cases in the 10th year; in 31 cases in the 11th year, and in 244 cases in the 12th year. In 3 cases menstruation was delayed until the 24th year, and in 1 case until the 32d year.—(*Centralbl. f. Gynäk.*, No. 23, 1894.)

CONCEPTION THROUGH AN ACCESSORY FIMBRIATED FALLOPIAN TUBE END. CÆSAREAN SECTION NECESSITATED BY AN OLD ECTOPIC PREGNANCY. By Prof. SANGER, Leipsig.

Frau K., aged 32, was brought to Sanger's Hospital on September 14, 1893. She was in poor health and was thin and worn-looking.

Her sexual history was as follows: Menstruation was of twenty-eight day type, duration eight days. She had had three normal labors, the last of which had occurred eight years previously. Puerperia normal. Between her labors she had aborted twice. Two years before admission she believed that another abortion had taken place. She was eight months in bed, blood escaped, but no ovum was seen.

Her last menstruation was January. She had since suffered from attacks of pain in the right side. On examination the uterus was found to

be in an advanced condition of pregnancy. In the right side of the pelvis was an immovable hard mass, not tender, surrounded with numerous adhesions. Some of these embraced the cervix and lower uterine segment and rectum. The mass occupied a considerable portion of the pelvis. It was diagnosed as an old ectopic pregnancy, an hæmatoma, or hæmatocele, accompanied with peritonitis.

On October 3, labor pains set in. It was seen that delivery through the vagina was impossible, owing to the pelvic mass, and Cæsarian section was performed.

At the operation the right fallopian tube was found lying with its outer end turned downwards into the pouch of Douglas. It was uniformly thickened to the size of the little finger. It appeared to pass into a hard, round mass, the size of a fist, which lay imbedded in adhesions in the pouch of Douglas. The ovary could not be found. The mass was shelled out, bleeding points being secured by sutures.

The left tube was covered with old adhesions at its outer end. Attached to it, about 7 cm. from the uterus, was an accessory fimbriated tube-end. Below it lay the ovary.

The mother and child did well.

No fœtus could be found in the old mass. The ectopic gestation had probably developed in the outer end of the tube, which had fallen into the pouch of Douglas and had become adherent, the gestation ceasing to develop.

The most interesting point in this case is, that owing to the occlusion

by adhesions of the normal ends of the tubes, the ovum, which grew *in utero*, must have passed into the left tube through the accessory fimbriated extremity.—(*Monatsschr. f. Geb. u. Gyn.*, Bd. i., Hft. 1.)

ON MECHANICAL AND OPERATIVE DILATATION OF THE CERVIX IN SEVERE ECLAMPSIA. By Dr. RICHARD BRAUN V. FERNWALD.

Braun gives the history of labor in a primipara and a tertipara in which immediate termination of labor on account of eclampsia was carried out with good results by the Mäurer-Dührssen method. The cervix in both cases was dilated by Hegar's dilators, passing a colpeurynter, and by deep cervical incisions reaching to the vagina, and then delivery was effected by turning and extraction. The incision wounds were in no case stitched. Braun, however, considers this desirable, and will do it in future cases. According to Braun the method of combined mechanical and operative dilatation of the cervix is easily carried out, not dangerous, and attains its object. In severe cases of eclampsia during labor he prefers this method to Cæsarean section. In spite of all the brilliant statistics of Cæsarean section, the Mäurer-Dührssen method remains much less dangerous; it has the further advantage that one can operate at once and does not require to wait until the preparations are made for Cæsarean section.—(*Wien klin. Wechnschr.*, vii., 20, 1894; *Schmidt's Jahrbücher*, Band 244, No. 10, 1894.)

BOOK REVIEWS.

(All Exchanges and Books for Review should be sent to Dr. C. G. CUMSTON, 826 Beacon St., Boston.)

FONCTIONNEMENT DE LA MAISON
BAUDELOCQUE. Année 1895. Par
le Dr. G. LEPAGE. Paris, 1895 :
G. Steinheil, éditeur, 2 rue Casimir-Delavigne.

This large brochure of some one hundred pages is a detailed account of the obstetrical clinic of the Faculty of Medicine of Paris, under the direction of Prof. A. Penard, during the year 1894.

In its pages will be found much matter of interest to the obstetrician, including symphyseotomy, eclampsia, obstetrical operations, etc., with reports of interesting cases.

The work reflects much credit on the staff of the hospital and the obstetrical work done in the capital of France.

TRAITE DES TUMEURS DE LA VESSIE.
Par le DR. CLADO, Chef de Travaux Gynécologie à l'Hôtel-Dieu de Paris. Paris, 1895. Société d'Éditions Scientifiques, 4 rue Antoine-Dubois. Price 16 frs. (\$3.20).

Tumors of the bladder have been the object of many important works in the last few years, and Dr. Clado has certainly been one of the most active contributors in this field. The work before us is not a compilation from the literature: it is an essentially original one, and covers a vast amount of ground in an unusually complete manner.

Beginning with an historical study of the question, the author next takes up the study of the pathological anatomy of vesical tumors, which is the most extensive study on this subject

with which we are acquainted, including the para-vesical tumors, 238 pages being devoted to this section. The symptoms are next discussed at length. The fifth section of the work is taken up with the diagnosis of tumors of the bladder, and too much praise cannot be given to it.

The sixth and last section, comprising 280 pages, is devoted to the treatment of vesical tumors, both in the male and female.

We cannot say too much in favor of this treatise, which comes from the pen of one who is a master in the matter, and trust that it may receive the attention and appreciation that it highly merits.

DIE KRANKHEITEN DER EILEITER.
Von A. MARTIN. Leipsig, 1895 :
Verlag von Edouard Besold. Price
13 mk.

This volume of 411 pages is the first of the Handbuch der Krankheiten der weiblichen Adnexorgane, which is being published under the direction of Prof. A. Martin of Berlin.

It is a most complete volume on the subject of diseases of the fallopian tubes, and is the fruit of a vast amount of work.

The first section treats of the anatomy, embryology and physiology of the tubes.

The second section covers the pathology, symptomatology and treatment of diseases of the tubes in a masterly way, with many excellent figures and plates in the text.

The third section is devoted to the study of tubal pregnancy, and, like the

former, a fine and thorough study of the subject.

The *Handbuch* is to be a very fine literary production, as the first volume has already shown, and we regret that, on account of limited space, a fuller review cannot be made.

LEHRBUCH DER FRAUENKRANKHEITEN. Von Dr. HERMANN FEHLING, Ord. Professor der Geburtshilfe und Gynäkologie an der Basel Universität. Stuttgart, 1894: Verlag von Ferdinand Enke. Price 13 mk.

This treatise on the diseases peculiar to women is of the highest order and covers the ground very completely.

Its distinguished author has written it in a very easy and interesting style, and has had the good sense to combine a sufficient amount of the pathology of the maladies under consideration, with the symptoms and treatment, without overdoing it and leaving the details of treatment in the background, as is the case with the majority of modern German works.

This volume will be found of especial use to the general practitioner, as the author has minutely described the diseases and their treatment; but to the specialist it will be found a work on which he may rely and consult with profit, as the great experience and sound judgment of the author is well known.

The work is divided into nine parts, each respectively treating the following subjects: General examination, general therapeutics (excellent), diseases of the vulva, diseases of the hymen and vagina, diseases of the uterus (very complete), diseases of the tubes, diseases of the ovary, diseases of the peritoneum, diseases of the ligamenta rotunda uteri.

SCHEMATA ZUR EINTRAGUNG DES BEFUNDES DER AUßEREN UND INNEREN GEBURTSHUELFLICHEN UNTERSUCHUNG. Von Dr. PAUL STRASSMANN. Berlin, 1895: Verlag von S. Karger. Price 1 mk. 60.

This is simply two diagrammatic figures, one full face the other in profile, of the female genital organs and pelvis, which are intended to serve as a map which, when filled out by the surgeon, will show the position of the uterus or a pelvic tumor, etc., according to the examination.

There are twenty-five of each diagram, bound in the form of a book and detachable.

These diagrams are well planned, and will be found useful in recording obstetric cases.

TRANSACTIONS OF THE ANTISEPTIC CLUB. By ALBERT ABRAMS, M. D. New York, 1895: E. B. Treat, publisher. Price \$1.75.

This is a very good "take off" on the various types of modern physicians and society discussions.

The author has portrayed the profession in a most comical way and the reader will find much fun and a certain wit throughout the book.

GYNÆKOLOGISCHE TAGESFRAGEN. IV. Heft. Von Dr. H. LOHLEIN, Ord. Professor der Geburtshilfe und Gynäkologie an der Universität Giessen. Wiesbaden, 1895: J. F. Bergmann, publisher. Price 2 mk.

This number of this interesting publication treats of the following subjects: Ovarian tumors and ovariectomy during pregnancy, labor and the post-partum, meningococcal sac-

alis anterior considered as an obstacle to labor and as a post-partum complication, symphyseotomy compared with the Cæsarean section and induced labor.

This publication will be found of considerable value to the gynæcologist desiring to keep abreast with scientific subjects pertaining to his branch.

THE CARE OF THE BABY. By J. P. CROZER GRIFFITH, M. D. Philadelphia, 1895: W. B. Saunders, 925 Walnut St., publisher. Price \$1.50.

After reading this very good little volume, which is intended by the author for mothers and nurses, we do not hesitate to say that it would be well for the practitioner to study it, as there is an amount of valuable matter in its pages regarding the care and treatment of young children.

Large works on diseases of children appear every day, but the little book by Dr. Griffith contains much that is most necessary to know and which the physician often neglects because the larger treatises do not take up the subject of care of young children in health.

TEXT-BOOK ON ABDOMINAL SURGERY. By SKENE KEITH, F. R. C. S., assisted by GEORGE E. KEITH, M. B., C. M. Philadelphia, 1894: J. B. Lippincott Co., publishers.

We find in this volume what we had expected, the sound writings based on personal experience of great extent and not a mere compilation from other sources.

The work is divided into two parts, viz., the surgery of the abdomen and the surgery of the abdomen peculiar to women.

In the first section are treated the

following subjects: examination of the abdomen, aspiration, examination of the fluids, exploratory incision; the preparations for and the abdominal operation, after treatment; the diseases of the peritoneum and intestine, operations on the stomach, appendicitis, surgical diseases of the liver, kidneys and spleen.

The second part includes tumors of the ovary and ovariectomy, diseases of the ovaries and tubes, fibroid tumors of the uterus, and lastly the pelvic obstetrical diseases and operations, including symphyseotomy and the Cæsarean section.

The Drs. Keith are to be congratulated on their successful production, which will be found a valuable addition to the surgeon's library.

THE ART OF MASSAGE. By J. H. KELLOGG, M. D. Battle Creek, Mich., 1895: Modern Medicine Publishing Co.

After careful examination of the volume before us, we find that it is a very complete work on its subject.

The author has studied the art in Sweden, France and other European countries, and in addition has a personal experience of some years, consequently his book should be one of authority, and it is.

Throughout it is filled with good photographic productions which render the technique easy to understand. To give the entire contents would be too long; suffice it to say that the work is most complete in every detail and is by far the best on the subject in the English language that has come to our notice.

Massage is a most important therapeutic measure, both in medicine and surgery, and the progressive physician will find abundant reward by consulting this excellent work.

A SYSTEM OF SURGERY. By AMERICAN AUTHORS. Edited by FREDERICK S. DENNIS, M. D., Professor of the Principles and Practice of Surgery, Bellevue Hospital Medical College, New York; President of the American Surgical Association, etc., assisted by JOHN S. BILLINGS, M. D., LL.D., D. C. L., Deputy Surgeon-General, U. S. A. To be completed in four imperial octavo volumes, containing about 900 pages each, with index. Profusely illustrated with figures in colors and in black. Vol. II., 915 pages, 515 engravings and 10 colored plates. Price per volume: \$6 in cloth; \$7 leather; \$8.50 in half Morocco, gilt back and top. For sale by subscription. Full circular free to any address on application to the publishers, Lea Brothers, Philadelphia.

The second volume of this system follows its predecessor at a short interval. Similar progress will complete within a few months the remaining two volumes of a work completely new and representing in every way the most advanced state of surgical practice. It is assuredly a great undertaking to secure the assent of the foremost surgeons to contribute the vast amount of matter contained in a work which will embrace about four thousand pages and two thousand engravings. In every detail of engravings, colored plates and binding, the work is certainly executed in the highest style of the various arts, many of the former being original or taken from French publications.

The present volume contains contributions from Drs. Frederic S. Dennis, William H. Forwood, George R. Fowler, Frederic H. Gerrish, V. P.

Gibney, W. W. Keen, Roswell Park, John B. Roberts, Nicholas Senn, Lewis A. Stimson and Henry R. Wharton. They have covered the subjects of minor, plastic and military surgery, diseases of the bones, orthopædic surgery, aneurism, surgery of the arteries, nerves and lymphatics, diseases and injuries of the head, surgery of the spine and surgery of the nerves, in a very complete and comprehensive manner. We can only say of this volume what we said of the first, namely, that it is a literary production of the highest order and exposes the science and art of surgery in every detail and in the latest scientific light.

TRANSACTIONS OF THE NEW YORK STATE MEDICAL ASSOCIATION. Vol. XI., 1894. Edited by E. D. FERGUSON, M. D.

The transactions of this scientific body have always been one of the richest in valuable contributions to medical science, and the present volume is replete with excellent papers, numbering in all thirty-six.

To mention them all would be too long, but we wish to draw attention to Dr. E. D. Ferguson's paper on a case of ectopic pregnancy at the uterotubal junction, Dr. J. E. Janvrin on the early diagnosis of tubal pregnancy, an important *mémoire* on hysterectomy in pus cases by Dr. W. R. Pryor, the technique of Cæsarian section by Dr. A. P. Dudley and hysterectomy for uterine fibroma by Baer's method, from the pen of J. T. Johnson, M. D.

The entire volume is, as usual, well worth perusal.



FIG. I

Sarcoma of Uterus; Multiple Fibroids; L. Ovary Cystic; Enlarged Tubes. See page 786.

Diameter 22-31 of original.

Drawn from nature by author.

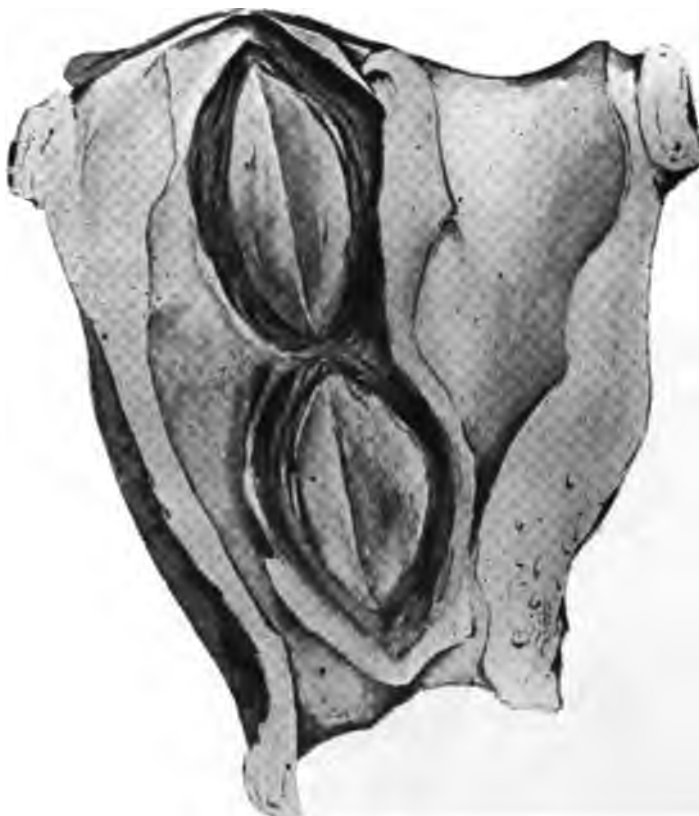


FIG. II.

Multiple Interstitial Fibroids. See page 787.

Natural size.

Drawn from nature by author.



FIG. III.

Fibro-cystic Disease of both Ovaries; Enlarged Uterus. See page 787.

Diameter 22-41 of original.

Drawn from nature by author.



FIG. IV.

Fibro-myoma Uterus; R. Ovary Fibro-cystic. See page 788.

Diameter 21-41 of original.

Drawn from nature by author.

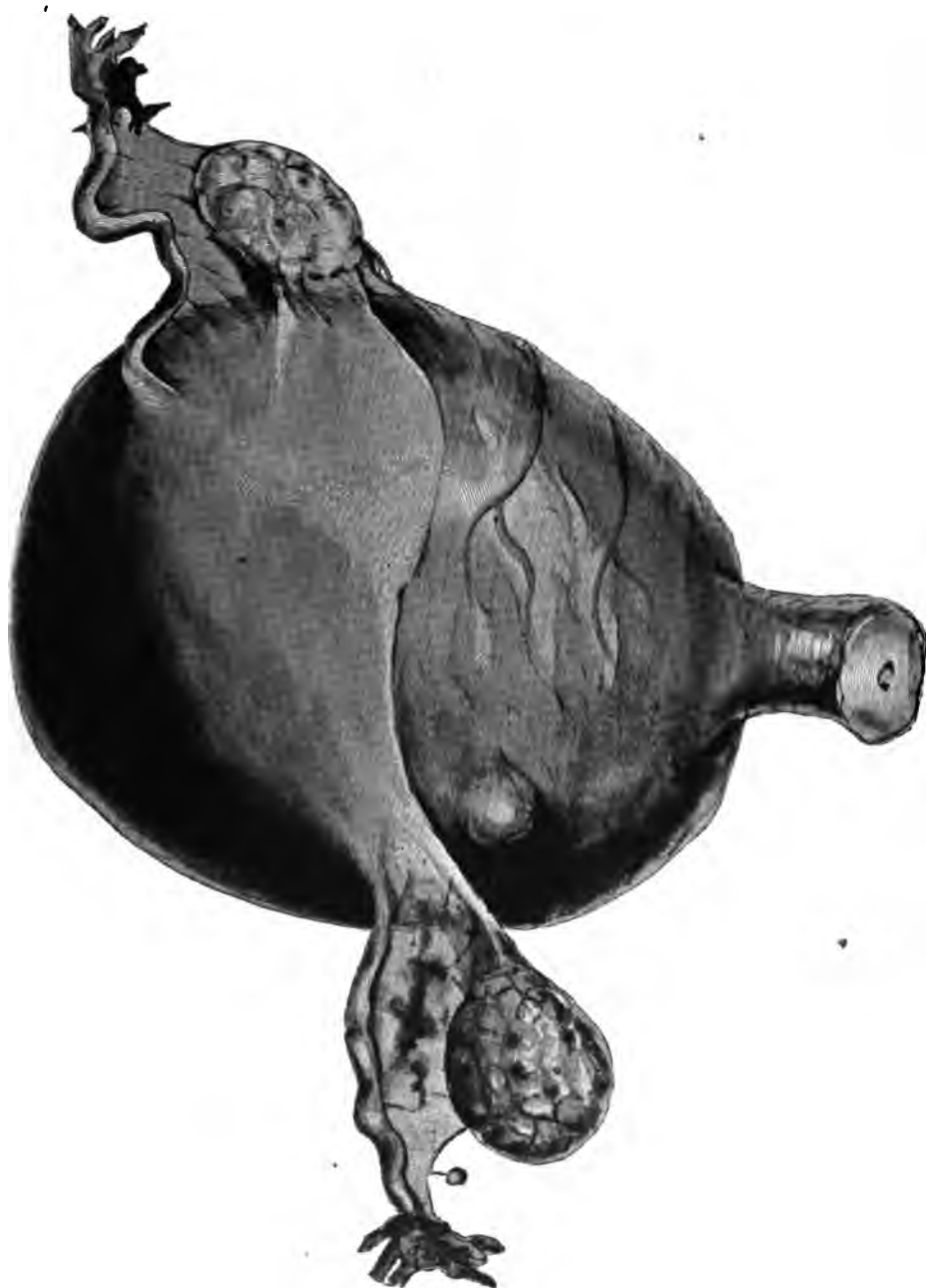


FIG. V.

Uterine Myomata. See page 788.
Diameter 33-52 of original. Drawn from nature by author.



FIG. VI.

Uterine Myomata. See page 789.

Diameter 38-47 of original. Drawn from nature by author.

ANNALS

—OF—

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ORIGINAL COMMUNICATIONS.

Total Hysterectomy by a New Vagino-Abdominal Method.

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BOSTON, MASS.

THOSE of you who have seen much of the work in total extirpation of the uterus, have watched the progress of the cases through convalescence, and have studied the after results, will, I believe, no longer express a doubt of the greater value of the total over the partial methods of hysterectomy, but will agree that the now important question for consideration is in regard to the method to be pursued and to the detail of operative finish. Owing to the variety of conditions for which the operation is indicated, and the great diversity of circumstances under which the operation is performed, no one method will entirely do away with all others, but improvements in the technique of any one will give it a wider range of usefulness, which must necessarily be at the expense of some other.

In determining the value of an

operation for total extirpation of the uterus, statistics of mortality, the principal items formally considered, are important, but now they cannot be entirely relied upon, because owing to the improvement in methods and the increasing skill of the operator death should be unusual, and depend much more on the disease and condition of the patient than the operation *per se*. The fatal cases should first be considered individually, noting their differences in strength and natural vitality, the variety and extent of the pathological conditions and complications, and the ability of their several operators to deal equally well with a given technique. They should then be compared with those nearest alike that have recovered in the same series, and again with like cases in the series of other operators.

Finally, we should reason *a priori*,

like the skilled mechanic who studies a problem set before him for the first time, noting the dangers and difficulties in each movement necessary to attain a given result, comparing the various means which the method offers for reducing the amount of technical skill necessary for the operator, and obviating the danger of injury to contiguous parts during the dissection, as well as furnishing the requirements of the patient's life, health and rapid convalescence, expressed in a short operation, little ether, diminished shock, etc.

It was after a careful consideration of these various circumstances, and a review of the advantages and disadvantages peculiar to the several techniques of vaginal and abdominal hysterectomy, that I have devised the following operative method, selecting the best parts in each other operation, avoiding so far as possible those attended by the greater difficulties, and meeting the new requirements by special means.* I have developed it by careful study of every case, slightly modifying the order of detail procedures, and now and then improving the instruments in such manner as to require the least possible time for their manipulation:

I have repeatedly put the method to a practical test under most trying circumstances, inviting the inspection and criticism of many members of our profession, and now, in the more

mature condition, it affords me pleasure to offer it for the consideration of this honorable body.

The vagino-abdominal method of hysterectomy is characterized by a division of the labor into two parts, vaginal and abdominal.

The *vaginal* part consists of:—

1. Sterilization of the cervix and vagina and their maintenance in this condition by closure of the uterine canal with a metal stem, which also serves as a guide and for attachment of an elevating staff.

2. Abcision of the vagino-uterine attachment, dissection of the cervix from the bladder in front and the peritoneum behind, and the packing of the cavity thus formed with gauze.

3. The closure of the vaginal vault from below.

(Items 1 and 2 are partly reversed in their order except in cases of cervical cancer.)

The *abdominal* part consists of:—

1. Opening of the abdomen by a median incision.

2. Ligaturing and section of the ovarian vessels and lateral folds of broad ligament.

3. Incision of the peritoneal covering of the uterus in front and behind, and its separation with the bladder to the lines of vaginal dissection.

4. Clamping of the uterine vessels, abcision and removal of the uterus.

5. Eversion of the flaps of peritoneum with the ovarian stumps, and closure of the lower abdominal opening with concealed sutures, the serous surfaces in contact.

6. Closure and hermetically sealing of the external abdominal wound.

The special instruments employed

* First communicated to the Gynecological Society of Boston in the early spring of 1894, and later presented in a paper at the June meeting of the Cambridge Medical Improvement Society ("Total Extirpation of the Uterus by a New Method."—Boston Medical and Surgical Journal, Oct. 18, 1894.)

in the operation are the uterine stems and the elevating staff.

The uterine stem is a device used to cork up the contents of the uterus, to give support and attachment to a staff, used for elevating the uterus, and to serve as a guide for determining the position and limits of the cervix. It consists of a cap to cover the cervix and a central stem that fits into the canal, the whole being cast and turned from one piece of metal. The cap is concave on one side and convex on the other, has a groove in the edge for a director, and a number of T shaped slots about the periphery for holding sutures. The central stem is smooth or has a thread cut upon it, which serves to hold the instrument into the uterus when it is not fastened with sutures. Perforating the stem for the depth of an inch is a conical shaped cavity, which receives the staff and holds it with a simple slip joint.

The staff is a steel rod bent on the curve of a prostatic catheter, except that the point is directed a little more outward and is made to fit the cavity of the stem.

Both instruments are inserted by the vagina, but the stem is removed with the uterus from the abdominal opening.

The details of the operation are as follows, viz. :—

PREPARATION OF THE PATIENT.

When the result of an examination determines for the first time the requirement of hysterectomy, the physical and constitutional condition of the patient are carefully noted, and unless they are favorable for an opera-

tion she is placed on tonic treatment and the heart-beat regulated. Especial attention is paid to the examination of the urine and kidneys, which almost always show some defect, and unless there is about the normal secretion of solid constituents operation is deferred.

If the uterus is enlarged and filled with soft cancerous or sarcomatous material, which for some time previously have been attended with exhausting discharges of a serous or bloody character, a preliminary thorough curettement, followed by rest in bed, will result in a very short time in the temporary improvement of the physical condition of the patient.

For a few days before the operation the patient is given a liquid diet and kept quiet in bed.

By packing the vagina daily for a week before the operation it will be stretched and softened considerably and give greater facility for the after manipulation.

The day before the operation the bowels are thoroughly cleared of all fecal matter and made less septic by the administration of ten grains of calomel in one dose, about noon, followed by teaspoonful doses of magnesium sulphate every hour until several movements have occurred.

The hair over the pubes is then shaved away, the patient given a warm bath, and scrubbed with soap, rinsed with bichloride solution (1-5000), which is allowed to dry on, dressed in sterilized clothing, and put to bed, with a bichloride pad over the abdomen, between sterilized bed clothing.

For supper is given a hot drink of malted milk or similar food. On the morning of and at least four hours before the operation rectal enemata of warm water are repeatedly given until the return is clear, then a vaginal douche of bichloride (1-1000). The lower limbs are clothed with woolen wraps, two ounces of whiskey and twenty minims of freshly prepared tincture of digitalis are administered by the rectum before the patient is taken to the operating room, and at the beginning of the operation $\frac{1}{4}$ grain morphine, $\frac{1}{150}$ grain atropia, and $\frac{1}{10}$ grain strychnia are given subcutaneously in one dose.

In order to avoid all unnecessary length to the period of anæsthesia the ether is not given until the preliminaries are nearly completed, and in the beginning is often substituted by the use of chloroform, either pure or in the form of the A C E mixture.

OPERATION.

A short speculum is introduced into the vagina and the perineum depressed. With the help of vaginal retractors the cervix is exposed to view and drawn as far as it will come into the introitus by means of tenacula forceps.

A probe is now passed and the direction, shape and size of the uterine canal determined.

Unless the canal is freely patent it is dilated with Wathen's instrument and treated with equal parts tincture iodine and carbolic acid, applied on a cotton stick. The excess of iodine, blood, etc., are irrigated away, and if the character of the disease is other

than cervical cancer the cervix is firmly held and a circular incision is made, simply cutting through the vaginal structures about the uterine neck, sufficiently remote from the uterus to include within it all diseased tissues, at the same time keeping as close as possible to the os, as in the usual manner of performing vaginal hysterectomy. In most cases this manœuvre is comparatively simple, but with a large tumor in a single woman somewhat advanced in age, with a rigid vagina, narrowed and elongated by long continued upward traction exerted by the uterus as it is forced out of the pelvis to seek room for the growing tumor, and with a cervix perhaps almost entirely "taken up" by the distension exercised by the new growth, or with a senile uterus firmly fixed by old adhesions in the upper region of the pelvis and nearly hidden from external inspection by the contraction of the vagina that occurs after a certain age, it is a matter of great difficulty and contrary to what might be expected, little help will be gained by incision of the sphincter vaginæ.

The uterus is now separated from its anterior and posterior attachments and coverings as freely as possible by means of the finger or the handle of a scalpel and then the cut margin of the vagina is caught with forceps and loosened sufficiently to allow it to be drawn together and sutured. A line of continuous suture is taken about one quarter of an inch from the cut margin, and is like the ordinary purse-string suture, except that the first stitch, which is placed at the back, is carried around the vaginal artery, the

suture drawn so as to leave both ends of even length in the vagina, the threads crossed, and then one side of stitches taken with one end and the other with the remaining end. In this manner the principal vessel is caught in a loop and when the ends of the suture are drawn tight, not only is the vault of the vagina closed in, but also any tendency to hæmorrhage from the vaginal artery is obviated.

A uterine stem is then selected according to the length of the cervix and size of the canal; with a soft uterus and large easily dilatable cervix, one with wide thread is used, but with a cirrhotic organ one with a fine thread (even smooth) is preferable.

The uterine stem is inserted and forced into place, after filling the cap with iodoform, either by simple pressure, or in case one with a thread is used by turning it up with a screw-driver, at the same time the cervix is held firmly by means of a pair of tenacula forceps fixed into the anterior and posterior lips.

If the case is one of cervical cancer the stem must be inserted before any incision is made, and the contents of the uterus and infective parts tightly sealed by sewing the vagina to the edge of the metal cap with sutures taken through normal vaginal structure, sufficiently remote from the cervix to include all diseased tissue. One should then proceed as above described for non-infective cases.

It is often advisable to tie a smooth stem into the cervix by means of one or more sutures to prevent slipping.

The staff is now inserted into the

central cavity of the uterine stem and held in place by an assistant; the parts sponged clean and dry; a tampon of iodoform gauze packed into Douglas' pouch, under the peritoneum and between the cervix and bladder; and the ends of the purse-string-like suture drawn tight and tied, closing in the vault of the vagina below the cervix, gauze and uterine stem, except for a small opening through which the staff passes. In exceptional cases, already mentioned, not only is this careful toilet of the vagina very difficult or impossible, but unnecessary and time-consuming, and should be omitted.

In these cases it is better to simply make a circular incision through the vagina, free the cervix and then pack hard the whole vaginal cavity with sterile gauze. This elevates the uterus, pushes the ureters further away to the sides of the pelvis, and serves as a guide during the dissection in the abdominal cavity. When this method is adopted the vault of the vagina can be closed in from the abdominal cavity.

The patient is now placed in position for abdominal section with means ready for obtaining the Trendelenberg posture. The usual incision is made, and of variable length to meet the requirements of the case. The peritoneal cavity is opened at the upper angle of the wound in order that the position of the bladder can be determined before the opening is completed and injury to it avoided. The incision is carried close to the pubes to gain as much room as possible for working in the pelvis.

The contents of the abdomen are

carefully inspected and the method of dissection determined.

If the case is a simple enlarged uterus with appendages approximately normal, the tumor is drawn out of the wound and to one side; the fold of broad ligament, including the tube and ovary of the other side, is put on the stretch and a row of sutures passed below the ovary, from close to the side of the uterus to the free margin of the ligament, so as to include the ovarian artery. This line of sutures is inserted by means of a perineal needle; is taken in the manner as a shoemaker's stitch, but each stitch — which includes but a small amount of tissue — is drawn tight, and secured by taking a turn of the loose end of the suture about the other, so as to form a series of single knots.

The uterus is then pulled over to the other side, and the remaining tube, ovary, vessel and ligament secured in same manner.

The ligaments are cut away above the ligatures, and between the points of their excision across the uterus in front and back about an inch above the attachment of the bladder anteriorly, and an inch above the cervix posteriorly the peritoneal covering of the womb is incised.

With the help of a scalpel handle, the bladder and peritoneum are now rapidly dissected up from the uterus in front until the line of former vaginal dissection is reached; the posterior layer of peritoneum is treated in the same manner; the sides of the uterus are freed from peritoneum as much as possible, when the lateral attachments, including

the uterine artery, can be easily clamped and the organ cut away and removed. In cutting away the uterus keep as close as possible to that organ.

During the dissection an assistant holds up the uterus firmly by means of the staff, which shortens and defines the neck and enables the operator to quickly and easily perform what is usually the most difficult part of the operation, the enucleation of the cervix. The gauze packing acts also as a guide and is of material assistance during this dissection.

The uterine vessels are firmly ligatured with kangaroo tendon, the clamps removed, and all oozing of blood from the pedicles stopped by suturing.

The anterior and posterior peritoneal flaps are brought together; the cut edges are turned in so as to bring the serous surfaces into contact, and the stumps containing the ovarian arteries are folded in at the angles so as to become extra-peritoneal, the whole being closely united by a line of blind sutures, which when drawn tight are situated outside of the peritoneal cavity. All clots are removed by dry sponging, the abdominal wound closed layer by layer with animal ligature, and finally sealed with cotton and collodion.

Although ordinarily it is preferable to remove the ovaries, should one or both be found firmly bound down by old adhesions and in the condition of a small hard mass, it is better to leave them *in situ* than to delay the operation by such time as is necessary for their removal. They will as a rule give rise to no further

symptoms, as has been repeatedly demonstrated by vaginal hysterectomy, where often they must necessarily be left behind.

When a large multiple fibroid mass is encountered, the topography of the parts must be carefully studied and the position of the bladder and (if possible) the ureters determined. If the growth forms with the uterus a single tumor, the same direction for operating as above described hold good, but where there are several distinct tumors, which are sessile in attachment and appear to have a very large pedicle, a sufficiently long cross incision is made through the peritoneal covering and each tumor is enucleated as far as possible. By this means the pedicle will usually be found much smaller than expected, forming a part of the uterine attachment, and easily included in the clamp employed for securing the uterine vessels of the same side. Care must be taken in cutting and dissecting back of the peritoneal covering not to tear or injure the ureter, the position of which cannot always be recognized. If it is determined passing over the tumor it should be dissected up and carried to one side with the overlying flap of peritoneum, but if it cannot be distinguished any and all tissue which resembles it should be treated in the same manner, and as the clamps are applied prior to the final abscision, bear in mind the watchword of this operation, "*stick close to the uterus.*"

If, upon opening the abdomen, bladder, omentum, bowels, uterus, tubes and ovaries, present as a confused and conglomerated mass, firmly

bound together by adhesions, the uterus can still be removed sub-peritoneally, as follows: A point is selected on the fundus of the uterus that is not obscured by adherent viscera, and a small cross incision made through the peritoneal covering. The edges can then be picked up with forceps; the opening intelligently enlarged, without injury to the adherent organs; and the peritoneum dissected from the uterus in every direction, well down on the sides and sufficiently to admit of the easy adjustment of the clamps. The organ is cut away, the vessels secured and the opening in the peritoneum closed as before, leaving the tubes and pelvis to drain per vaginam. In other words the uterus is removed by the combined method, with the same consideration for its surroundings which the French operators have when they extirpate by the vaginal method.

After the operation, shock is combatted with saline rectal injections, strychnine, morphine, atrophine, caffeine, digitalis, nitro-glycerine, etc., as the case may require.

The advantages of the vagino-abdominal method are:—

Over the vaginal method, simply:—

1. The peritoneal cavity is completely closed and left with no raw surface for subsequent adhesion with viscera.
2. Primary union is the rule and convalescence rapid.
3. The subsequent complication of rectocele or vesicocele is avoided.
4. The uterine vessels in all cases can be perfectly secured and there is no danger of secondary hæmorrhage.

5. Pus tubes and ovaries are more completely removed.

Over the abdominal methods:—

1. Complete sub-peritoneal drainage can be established.

2. The length of time which the peritoneal cavity is exposed is greatly reduced by the previous vaginal dissection, and shock is consequently diminished. (A large uterus can be removed in from twenty to thirty minutes.)

3. The limits of the cervix are closely defined and the necessary extent of the dissection readily determined.

4. The asepsis is more complete and there is less danger of subsequent infection.

Over both:—

1. The dangers of hernia are reduced; vaginal over the vaginal method, ventral over the extra-peritoneal treatment of a constricted stump.

2. Danger of injury to the ureters is avoided.

3. The manipulation is easier in the most difficult parts of other operations.

4. There is less danger of injury to the bladder and other viscera.

5. Hæmorrhage from the vaginal artery is avoided.

6. The operation is practically bloodless.

7. It offers a means for removing large uterine tumors with extensive adhesions which could only be done with great difficulty or not at all by the other methods.

8. Its greater perfection of the principles of modern aseptic surgery.

Appended is a report of six cases, all

of which made an excellent recovery.

CASE I.—Sarcoma of uterus. Vagino-abdominal hysterectomy. Recovery. Family physician, Dr. E. de la Granja. Mrs. L. W., nullipara, several miscarriages, married; first seen Feb. 18, 1894. Age sixty years. Housewife. Family history not ascertained. Previous history: good health until a few months ago; tumor detected a year ago; later, watery and bloody discharges, progressive weakness, emaciation, attack of la grippe, circumscribed peritonitis, and distress with pressure symptoms. Previous treatment with ergot and tonics. Present condition extremely weak and nervous, tumor reaching to umbilicus, bloody and watery discharges, emaciated, frequent attacks of pain, insomnia, requires much opium. Physical examination: enlarged uterus, short cervix, long, narrow and rigid vagina, clean os, sound passes four and one-half inches, lungs, heart and kidneys normal; urine low; specific gravity, 1.015; no albumen. Preliminary treatment: removal of nearly a quart of soft, friable sarcomatous tissue by curetting in two sittings; the second necessitated as the great loss of blood and feeble condition of the patient during the first attempt would not admit of it being finished. Tonics and stimulants. Curettings February 12 and March 17. Operation of hysterectomy April 10, 1894. The patient made a good recovery, enjoyed fair health during the summer and moved out of town, thus passing out of my hands. I learned that she died with symptoms of renal disease during the early winter.

CASE II.—Multinodular fibroid uterus. Vagino-abdominal hysterectomy. Family physician, Dr. F. C. Osman of Dorchester, Mass. Mrs. S., married, *prima para*, no miscarriages, first seen April, 1894. Age forty-two years. Housewife. Family history negative. Previous history: a slowly developing tumor of the right broad ligament, cystic, causing such disturbance that its removal was advised and performed by Dr. William T. Lusk six years previous, and at the same time both ovaries were also removed. Small multiple fibroids had been recognized before, and the diagnosis was verified at the time of operation. The health improved; but there was constant pain, discomfort and disability up to the present time, with swelling of the left leg, of recent origin. She had received various anodyne, stimulating, tonic and local treatment without much benefit. Perineorrhaphy seven years ago. At the time of operation she was pale, emaciated, feeble, but of a cheerful and hopeful mind. Good steady pulse, and no evidence of renal disease. Menstruation (*metrorrhagia*) regular to time of hysterectomy. Physical examination showed an enlarged uterus, nodular, and lying back against the promontory, and somewhat low in the pelvis. The os was clean, the canal four inches deep, and there was nothing peculiar about the vagina. Operation for hysterectomy was performed May 1, 1894. The details of the operation were carried out carefully in every particular according to my previous description. There was no appreciable shock, and the patient made a

complete recovery, and has since been perfectly free from pelvic pain and discomfort, although she still suffers from some cystitis. Urine, 1.031; no albumen or sugar.

CASE III.—Fibro-cystic disease of both ovaries, enlarged uterus, vagino-abdominal hysterectomy. Recovery. Family physician, Rich. Hogner, Boston, Mass. Mrs. N. O., married, nullipara, no miscarriages; first seen August, 1894. Age twenty-nine years. Housewife. Family history shows a sister, two-para, about forty years old, who died in June, 1893, from sarcoma-cystica-ovariorum. Previous history: for several years she has suffered from excessive and long continued menses, occurring about every two weeks. Last May, after heavy lifting, she had an attack of pelvic peritonitis, with *metrorrhagia* so extensive as to threaten the patient's life, complicated with slight nephritis and acute endocarditis, as well as embolic pneumonia. For a year and a half menstruation had been regular, except for two periods. Previous treatment consisted of gynecological kinesitherapy according to the method of Thure Brandt, and Swedish medical gymnastics. Her condition at the time of operation was excellent as far as the general health was concerned. Examination showed a tumor reaching nearly to the umbilicus and closely connected with the uterus. The fundus could not be determined. The urine was normal. The cervix was normal, uterine canal four and one-half inches and vagina roomy. Operation Sept. 11, 1894, was unusually long, owing to numerous ad-

hesions. Very little shock followed; the urine of the first ten hours was smoky and albuminous. Recovery was perfect, and the patient has remained well since.

CASE IV.—General interstitial fibroid uterus, sub-mucous fibroid, ovarian fibro-cystic tumor on the right side. Vagino-abdominal hysterectomy; recovery. Family physician, Dr. Mary E. Bates, Boston, Mass. Miss E. A., single, nullipara, no miscarriages; first seen April, 1894. Age forty-three years. School teacher. Family history; mother has suffered for years with an abdominal growth; sister and brother well. Previous history: dysmenorrhœa from childhood, steadily growing more severe, and especially during the past ten years. Ten years ago it was claimed that she had a misplacement of the uterus, and a ring pessary was worn for several months with relief of symptoms. For several years she has had flatulent dyspepsia and headache occasionally. Five years ago she was curetted by Dr. Marcy. For several years menstruation has been nearly every two weeks, and very profuse. A watery discharge has been noticed most of the time, and required the constant wearing of a napkin for two years. Extremely feeble and exhausted on slight exertion, although well nourished. Pallor and discoloration of the skin. Heart, lungs and kidneys normal. Uterus considerably enlarged, cavity four and one half inches deep, tender; os clean. Vagina somewhat close, right ovary painful to pressure. Urine normal. Preliminary treatment by curetting in May, 1894, rest in bed,

tonics, and sent to the seashore for the summer. Came back with increased tone and weight, but incapable of work. Operation Oct. 25, 1894. Primary union of parts, but some bladder catarrh followed, with occipito-cervical neuralgia. Steady improvement from the beginning, and she resumed her occupation as teacher April 1, 1895.

CASE V.—Large uterine myomata, vagino-abdominal hysterectomy; recovery. Family physician, Dr. John E. Somers, Cambridge, Mass. Miss M. R. Nullipara, no miscarriages, single. First seen December, 1894. Age thirty-two years. Domestic. Family history: both parents living; of thirteen children one sister died from uterine tumor, and two others in confinement. Previous history: excellent health until the summer of 1893, when a hard bunch, at first pulsating, but not later, was discovered in the lower abdomen. It was not tender to touch, and did not increase in size for a year. Menorrhagia was severe after the tumor appeared, requiring two dozen napkins at a period. It was painless. There was some leucorrhœa, but not enough to require the wearing of a napkin. Previous treatment with tonics. At the time of operation she was pale and cachectic looking, with a doughy condition of the face. The heart was irregular, and there was an indistinct systolic murmur. The urine had a specific gravity, 1.020; no albumen, but many squamous and pavement epithelial cells with some mucous. She was well nourished and without evidence of emaciation. The uterus reached above the umbilicus,

was symmetrically enlarged with a cavity six inches deep, and a clean os. The vagina was roomy. Operation Jan. 17, 1895. While on the table the patient was at times considerably cyanosed and the pulse could not be determined. She reacted well, however, and made a rapid convalescence with primary union. After the operation the urine showed traces of albumen, and some hyaline casts. The mind gave indications of impairment, but there is improvement in this particular.

CASE VI.—Large uterine myomata, vagino-abdominal hysterectomy; recovery. Family physician, Dr. J. E. Somers, Cambridge, Mass. Miss L. B. A. Nullipara, no miscarriages, single. First seen December, 1894. Aged thirty-seven years, school teacher. Habit of taking long walks. Family history negative. Previous history: well until the summer of 1891, when after a long and fatiguing walk on a very hot day, menstruation occurred a week before it was due. After this event, frequent and profuse metrorrhagia followed, and continued at irregular intervals to the date of operation. In the Fall of 1893 and Spring of 1894, attacks of hæmorrhage were especially severe. In January, 1894, phlebitis occurred in both legs and confined her to bed several weeks. The tumor was first discovered in June, 1894, and in the Fall of the same year a watery discharge from the uterus

appeared, so profuse as to necessitate the use of a napkin constantly. Previous treatment of tonics and electricity since July, 1894, relieved to a certain extent the exhausting hæmorrhage. Present condition fairly good, pallor being the worst symptom. Some œdema of the limbs, the urine increased in quantity, with a specific gravity 1.015. Solids normal in amount. Heart, lungs, and kidneys were free from disease. Uterus symmetrically enlarged, reaching above the umbilicus, cervix short and "taken up" high in the pelvis. Os clean, vagina long and narrow. Sound passes nearly five inches. Operation March 7, 1895. A stem could not be inserted, and after freeing the uterus from the vagina the parts were packed with gauze and the operation finished in the usual way through the abdomen. Twenty-five minutes only was consumed in making the incision and removing the uterus, and the toilette of the peritoneum and closure of incision was finished in the same time. The patient rallied quickly from the operation and made an excellent recovery. This was the first case that I had been obliged to leave the vagina open above, and although the recovery was as complete as the others, a daily variation of one to two degrees of temperature, and slight vaginal discharge, showed the cavity at the vault of the vagina healed by second intention with granulation.

Report of Additional Operations for Extra-Uterine Pregnancy.

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CINCINNATI, O.

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and of the British Gynecological Association.*

THE clinical report of the six cases here presented complete the series of sixteen consecutive cases of operations for extra-uterine pregnancy, being all the operations made by me for the relief of this accident up to the present time, July 1895. The first ten of the series have been reported in full in the Cincinnati Lancet Clinic, July 29, 1893, and will not be referred to here further than to say that nine of them recovered and are now living.

There are so many interesting features connected with the clinical history of this accident that I deem it worth the time necessary to study them carefully. As my operative experience increases I am more and more convinced that a careful clinical study of the individual cases of ruptured tubal pregnancy by the profession at large would yield a rich harvest in the saving of suffering, and many valuable lives if they were referred to the operator earlier after the initial rupture than is now usual.

In studying the clinical history of most of these cases, especially after the operation has been made and with the specimen before us, every one wonders why there should have been

any doubt as to the diagnosis before the operation. My object in presenting the report of these cases is to stimulate closer observation and clinical study of each individual case in this class of patients.

CASE XI.—Mrs. D., colored, age twenty-seven years, married sixteen months, no children, was seen in consultation with her physician, Dr. Davis, at her home in Addyston, O., June 14, 1893. The patient had been confined to bed for five weeks with peritonitis, which commenced suddenly with a severe attack of pain in the right half of the pelvis. At the time of my visit she had well marked sepsis. She was a frail little woman, weighing less than one hundred pounds. Her pulse was 140, temperature varying at irregular intervals from 100–104. The patient was known to have had a fibroid of the uterus for several years. Physical examination revealed a pelvic tumor about the size of a cocoanut, extending into the right side of the abdomen. The left half of the tumor appeared to be the enlarged uterus. To the right was a mass of doubtful character, which was much softer than the uterus itself.

She was too ill to be moved, so with the assistance of Drs. Colter and Gates of this city, and her family physician, abdominal section was made at her home on June 16, 1893. When the abdomen was opened the peritoneal cavity contained a pint of dark coffee-ground appearing fluid, mixed with broken-down blood clot and pus. The tumor at the right of the enlarged uterus was the gestation sac of a tubal pregnancy, containing the foetus. The sac had ruptured some weeks before. The uterus contained a small fibroid, which complicated matters greatly, necessitating hysterectomy before the operation could be completed.

The patient was put to bed suffering greatly from shock, with a pulse that was barely perceptible. She never fully rallied, but died the following day. It was evident that the pre-existing sepsis and her severe illness of five weeks duration were strong factors in the cause of death.

CASE XII.—Mrs. S., age thirty-two, married five months, no children, was seen in consultation with Dr. Senour at her home in Troy, O., August 6, 1893. She had been confined to bed for four weeks with peritonitis and sepsis. There was a history given of severe pain in the abdomen at the commencement of the illness, and within a week afterwards a small tumor was observed in the pelvis, which gradually enlarged until it extended well above the brim. At the time of my visit she had fluctuating temperature, a rapid pulse, and plainly marked sepsis. The diagnosis was that of ruptured tubal pregnancy with large blood clot.

Notwithstanding her feeble and exhausted condition, an operation was advised upon the ground that it promised a hope, while without it there appeared to be none. The operation was made early the following morning; present and assisting, Drs. Senour, Wright, Thompson, Greene and Coleman.

There were fully two pints of blood clot in the pelvis, and it had commenced to suppurate. The right tube was the site of the foetal sac, and in the blood clot in the pelvis was found the foetus, which was less than one inch in length. The abdomen was thoroughly irrigated and drained, and the patient put to bed profoundly shocked, with little prospect of recovery. She rallied slowly, had a tedious convalescence, but finally recovered.

CASE XIII.—Mrs. K., age thirty-three years, married eight years, one miscarriage seven years ago, no children, has never considered herself well since her miscarriage; has had several mild attacks of pelvic peritonitis. The present attack commenced somewhat similar to the previous attacks, except that it was more severe at the onset for a few hours. She had missed one menstrual period and was nearing her next when the attack of pain came on. This was soon followed by pelvic peritonitis which became general within a day or two afterwards. The case was seen with Dr. Miles of this city on October 27, 1893, after five weeks illness.

After the commencement of her illness she had two or three acute attacks, and as often had apparently

recovered to the point that it appeared she would soon be able to leave her bed, when she would again be seized with a paroxysm of pain. A diagnosis of ruptured tubal pregnancy was made; the patient was suffering from septic peritonitis, with rapid pulse, great pallor, fluctuating temperature, chills and sweats. The tumor extended above the brim of the pelvis and appeared to be a well-organized blood clot. Like the preceding case, operation promised the only hope, and that a forlorn one. Operation was advised and made early the following morning. There were about three pints of blood clot which had commenced to suppurate. The tube was ruptured near the middle and contained the placenta. The operation was a tedious one owing to the soft condition of the broad ligament on the affected side, so that we had great difficulty in controlling the hæmorrhage. The ligatures would cut through the tissues before they could be drawn tight enough to stop the bleeding, thus complicating the operation greatly. The patient died from shock the following morning.

CASE XIV.—Mrs. H., age thirty, married four years, one child three years old, no miscarriages. Has never considered herself thoroughly well since the birth of her child; has always suffered more or less with pelvic pain, backache and leucorrhea since that time. She has been treated she says for womb trouble.

Her present illness commenced Jan. 14, 1894, with a severe attack of pain in the lower part of the abdomen, which necessitated the use of

morphine by her physician. This attack of pain came on about three and a half weeks after her menstrual period was due, she having missed it. Her physician, Dr. Van Zant of this city, was in doubt as to the cause of the attack. The patient considered herself pregnant, and believed that she was having an abortion as she had a bloody discharge from the vagina. Within a few hours the pain became more tolerable, she gradually improved and at the end of a week was able to sit up for a few hours.

Four weeks later she had a second attack of pain requiring morphine for relief; she was confined to bed for a week, after which she again improved, but not sufficiently to move about the room. Within a few days after her second attack she began to show signs of sepsis. There was a well marked tumor in the pelvis. Feb. 24, after a consultation with her physician, she was sent to the Presbyterian hospital, and a section was made on the morning of Feb. 27, six weeks after primary rupture. About two pints of blood clot were removed from the pelvis. The gestation sac, which was the right fallopian tube, was tied off. The opposite ovary, which was bound down by old adhesions, was removed. The abdomen was irrigated and drained, and the patient made an uninterrupted recovery.

CASE XV. Mrs. V., age thirty-six years, mother of two children, the youngest twenty months old; a strong, vigorous woman until the birth of her last child, since which time she gives a history of having

suffered from some slight uterine trouble, but never of such a severe type as to make her seek relief. I was called to see her with her physician, Dr. Van Meter, on April 15, 1894, and the following history was elicited: She was taken with severe pain the last week in March, and had been sick ever since. She supposed she was pregnant, as she had missed a period, and the second one was about due when the pain came on. She was not considered seriously ill until a few days before my visit, when really alarming symptoms were developed. She had peritonitis, rapid pulse and high temperature. She was a fleshy woman; the abdomen was so rigid nothing could be felt above the brim of the pelvis, but by combined examination, a distinct tumor could be made out at the side of the uterus. She was sent to the Presbyterian hospital on April 16, and on the seventeenth the operation was made. There was about one pint of blood clot in the pelvis; the pregnancy was in the left tube, with rupture near the centre. The opposite ovary was bound down by adhesions, and was also removed. She was thoroughly irrigated and drained, and recovered without incident.

CASE XVI.—Mrs. H., aged thirty-six years, mother of five children, youngest nineteen months old; has been conscious of some uterine trouble since the birth of her last child, but not of a severe type; has never had treatment. August 1, 1894, in the act of rising from bed, she was seized with a severe attack of pain in the abdomen. She sent for her physician, Dr. Goode, who administered

morphine for relief. Dr. Goode left the city the same day for his summer vacation, and was absent some three weeks. The patient was left in the care of a neighboring physician, who saw her a few times, and as she appeared to be convalescent he then ceased his visits.

From that time until the twentieth of August the abdomen remained sore and tender, and it was only sheer necessity that compelled her to superintend her work. She was able to sit up but little during this time.

On the twentieth of August she again had a severe attack of pain, and sent for Dr. Goode, who could outline a distinct tumor in the pelvis, extending well into the abdomen. The case was seen in consultation with Dr. Goode on August 27. She was sent to the Presbyterian hospital, and the operation was made August 31. There was a large quantity of blood clot, estimated at several pints, in the pelvis and abdomen. This had commenced to suppurate, and she was suffering from contamination from this cause. She had a high temperature and rapid pulse. After tying off the gestation sac, which was the right tube, she was thoroughly irrigated and drained. She was profoundly shocked when put to bed, and rallied very slowly, but finally recovered, and went home at the end of four and one-half weeks.

In my limited experience of the sixteen cases reported, the clinical history in the individual cases differ in many particulars from that which has been laid down for our guidance by writers upon this subject. The clinical facts are of such vast im-

portance to the welfare of the patients that I am induced to make a few remarks along this line. Many of the older writers emphasize the fact that a great number of the ruptured tubal pregnancies occurring in the early months of gestation are just as likely to rupture into the fold of the broad ligament as to rupture into the peritoneal cavity. If the rupture takes place into the broad ligament the continued bleeding dissects up the pelvic peritoneum, causing extra-peritoneal hæmatocele. The loss of blood is thus limited, and nature's effort will be all-sufficient to cure the patient, and no operation will be required. We will grant that nature can absorb a blood clot from the broad ligament in those instances wherein it occurs; yet I am convinced that all of these patients should be carefully watched, with the idea of making an immediate operation if alarming symptoms are developed, which might follow rupture of the peritoneal covering, converting it into an intra-peritoneal rupture. This has been known to occur in at least one instance. Every case of pelvic hæmatocele under these circumstances should be regarded with suspicion, and the patient carefully watched for several weeks, or until she is thoroughly convalescent. During this period of watching if it is found that she have a recurrence of pain, indicating renewed hæmorrhage, a section should be at once made and the case dealt with upon sound surgical principles. If at the time of operation it is found to be one of hæmorrhage into the broad ligament, it can be dealt with surgically just as any other form

of rupture, and the patient will be saved the danger of still greater loss of blood and of sepsis. I am strongly inclined to the opinion that not a few of the recoveries reported as rupture into the broad ligament were really rupture into the peritoneal cavity. The fact that they recovered is no proof that the rupture was extra-peritoneal, as some would have us believe, for it is a well known fact that the peritoneum is competent to absorb the blood clot.

In a number of cases coming under my observation the blood clot was so firm and fixed in the pelvis that it could be as easily outlined above the brim of the pelvis as is usual in small abdominal tumors, and not a single sign or symptom in the clinical history or physical examination upon which we could base a positive opinion that there was an intra-peritoneal rupture, except that there was not that stricture of the rectum, described by Mr. Tait, which, he says, is so likely to exist in extra-peritoneal rupture "caused by the effused blood dissecting round the rectum, outside the peritoneum." This stricture does not exist in intra-peritoneal hæmorrhage, and is therefore of great value as an aid to differential diagnosis. In a number of the cases reported, if we were to take the facts and base our diagnosis upon them, we would have all of the evidence upon the side of extra-peritoneal rupture, or rupture into the fold of the broad ligament, with the one exception noted. Subsequent operation upon these very cases demonstrated the fact that they were intra-peritoneal in every case. This deceptive condition is fraught

with grave danger to the welfare of the patient, if it cause her attending physician to hesitate or falter, as it usually does, in his advice favoring an operation. The facts in the matter are, if the tubal rupture occurs in the first few weeks, and the rent is a narrow one, the bleeding goes slowly on. The more fluid portion of the blood becomes absorbed, leaving only a blood clot, which acts as a foreign body, and in nature's effort to relieve herself, a barrier of lymph is thrown out. The intestines and omentum become agglutinated around and above the blood clot in the pelvis. In ten or twelve days the blood clot becomes organized and the adhesions firm enough to depress the pelvic floor, pushing the uterus to the opposite side. The blood clot forming a tumor may fill the pelvic cavity, almost presenting at the vulva, and the upper edge may be only an inch or so above the brim. The physical condition here presented is exactly that which one would expect to find if the case was actually one of rupture into the fold of the broad ligament. In some of these cases the pelvis is so much occupied with the blood clot that it is with difficulty the finger can be introduced into the vagina for the purpose of examination. This picture is not an imaginary one, and I have had this error to overcome in the minds of the family physician in a number of cases. In one case the consulting physician—one of the best known obstetricians in our city—was so certain it was a rupture into the broad ligament that he used an aspirator to draw off the blood clot, but found it so well organized that he could not

remove it this way. I was called, and made a section, and like the rest, the rupture was free into the peritoneal cavity from the first.

In not a single instance has there been anything like extra-peritoneal rupture, but, on the contrary, in every case the rupture took place on the *free border* of the tube, and the bleeding was in the peritoneal cavity from the first. This I am convinced is in accord with the experience of every operator in this department of surgery. The sooner we can correct this false impression of the great tendency of rupture into the broad ligament, and the great security to the patient on that account, the better for the patient and the better for the profession. I will grant that some of these cases do recover without operation, yet for the safety of the patient we should act and teach that all cases of ectopic pregnancy are primarily tubal, and the tendency is to rupture into the peritoneal cavity and not into the broad ligament. This is a safe doctrine both for the patient and for her physician, for the reason that if the blood clot is a small one, and the patient apparently recovering from her first hæmorrhage, and her physician feels inclined to take the responsibility of deferring the operation, he has a full knowledge of the great danger to his patient from hæmorrhage. The responsibility is not to be lightly assumed.

Again, if the profession adopt this doctrine, they will not defer the operation when there is urgent indication for relief, hoping against hope until the patient is moribund, and then refer her for operation. My

experience may be unique, but in every case except one (which was operated before rupture took place) primary rupture occurred from three to twelve weeks before operation. In the cases where I spoke of the blood clot commencing to suppurate, I believe it was due to contamination of the blood clot from the intestinal tract from the *bacillus coli communis*. In a number of the cases the blood clot had a fæulent odor. Every case was irrigated and drained.

Rupture usually takes place before the tenth week, and one of the greatest stumbling blocks to diagnosis in the hands of the general practitioner is the fact that in many of these cases the patient is able to leave her bed at the end of two or three days, apparently thoroughly convalescent if not thoroughly well. Vaginal examination at this time does not reveal a tumor, but an ill-defined, boggy sensation, owing to the fact that the blood clot is not sufficiently organized to be felt as a tumor. Within a week or two the patient has a recurrence of colic-like pain, lasting from an hour to several hours. This may or may not be followed by preceptible shock. This is misleading to the physician, who looks for shock in all cases. It is a well known fact that many of the patients suffering from tubal pregnancy are subjects of chronic salpingitis; of this the family physician is aware. When the attack of pain is not accompanied by shock, which he has been taught to believe means so much in these cases, he reasons that she is suffering from an attack of pelvic peritonitis due to the previous

pelvic disease. He is thus likely to be led into a mistaken diagnosis. This has occurred in many of the cases coming under my observation. We have been taught by papers and articles upon this subject that in all cases of primary rupture there is a well defined collapse following the first attack of pain. This is not true by any means. While it is present in many cases in the first attack, the patient may have one, two, three or even more subsequent attacks, corresponding with renewed hæmorrhage, and not have shock until the fatal hæmorrhage occurs. Again, if the shock be present in the first attack it may have passed away before the attending physician sees his patient.

Case No. 7 in my previous report, went from her flat in the third story to the dentist's, three blocks away and up high stairs, and had a tooth extracted, returned home and was then seized with pain, followed by collapse from which she never rallied. This patient had suffered from colic-like pains, lasting for from one-half hour to six hours, during a period of eight weeks. She had had eight or ten attacks before the final one, when I was called. She was removed to the hospital and immediately operated under ether, but loss of blood before the operation was made was so great that she never rallied. The point I wish to emphasize in this instance is this, that although the fœtus was the size of a three months' gestation, and she had been suffering attacks of pain at intervals of a few days for eight weeks, and also from hæmorrhage at different times, as was

plainly evident from the character, various shades of color and consistency of the blood clot, yet she had never suffered from shock but once, the final hæmorrhage. In studying the work of other operators as well as the cases coming under my observation, I am convinced that the mortality following the operation for

ruptured tubal pregnancy, if made before the patient is exsanguinated, would be as low as in any of the operations in abdominal surgery. My only deaths following the operation have been where the patient had not enough blood remaining in her veins to rally from the anæsthetic.

Neuralgia and Uterine Affections.

A CLINICAL LECTURE DELIVERED AT THE SUFFOLK DISPENSARY

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GENTLEMEN:—To be a good surgical or gynæcological diagnostician is entailed the necessity of being most familiar with general medicine, and the nervous system with its pathology is certainly closely related to existing pathological conditions of the genital organs in many cases.

Today I would invite your attention to the subject of neuralgia depending on lesions of the uterus, a subject which has not received the attention that it deserves, and without going into details I would recall to your minds the fact that early in the history of medical science physicians have recognized and recorded the near relations uniting genital disorders with the most varied morbid phenomena.

Of late gynæcologists have called attention to certain gastric symptoms and neuropathic disorders in

patients affected by some lesion of the uterus or adnexa. It may be said, taking into consideration the former and present records, that there is not one system, one organ, that may not offer some pathological condition of greater or less duration, but which is always capable of amelioration in direct relation to the progress of improvement of the uterine affection.

Among these various disorders those of the nervous system are foremost. They are first marked by a change of character, while sensitive or motor symptoms of every description may also be present, and here, as in the case of intoxication, the reaction of the nervous system is all the more pronounced the greater the hereditary or acquired stigmata of the subject.

Besides the major nervous troubles,

which are clearly hysterical or neurasthenic, you will frequently meet patients who complain of severe periodical pains seated in the nerves and having all the classical characters of neuralgia. The neuralgias are of two orders; one type depends on a propagated lesion, as for example sciatica produced by compression or invasion of the nerve by a uterine or ovarian tumor, and here the pathogeny is clear. But the other type is neuralgia of nerves situated at some distance from the genital organs. In this type the relation which unites them to the pathological condition of the genital organs is not hardly evident and may even go by unnoticed.

It is these distant neuralgias that I wish to particularly treat in this lecture. I, however, include in this class certain pelvic neuralgias, which in spite of their proximity to the diseased genital organs do not show upon examination that the pathological condition has any *direct action* on the painful nerve.

These neuralgias are so frequently met with in gynæcological practice that it is almost impossible to think that they may be passed over unnoticed. The recent text books have little to say on the question, but there are some publications which have treated it, and Debove, in his recent and very excellent *Manuel de Médecine*, volume three, particularly calls attention to the genital origin of many neuralgias.

In the great majority of cases your patients will consult you for the pains, never suspecting any uterine trouble, but if you proceed

with care in your questioning and examination you will not be long in drawing your conclusions as to the probable factor of their production.

The following types of neuralgia are probably the most frequently met with when produced by a lesion of the uterus. (1) Facial neuralgia; (2) Intercostal neuralgia; (3) Sciatica; (4) Abdomino-lumbar neuralgia.

As to the genital lesions that have produced them I will mention endometritis, polypus of the cervix, ulcerations of the cervix, fibroids, retroflexions and carcinoma. I think that the facial and intercostal types are perhaps the most frequent.

Facial neuralgia is in direct relation to the anatomical distribution of the trigeminus, the pain being seated in one or all of its numerous branches, or in a part of a branch. It could be bilateral, although I am not acquainted with any record of such a case.

Generally speaking, the situation of a neuralgia depends on its cause. In the greater number of cases neuralgia of the inferior and superior branches of the maxillary is produced and kept up by alveolo-dental lesions; when the ophthalmic branch is affected the cause will generally be found in the eye or nose. In the first-mentioned type the teeth may be found in a perfectly normal condition, but Prof. Duplay has pointed out that a lesion in a tooth may not exist, the pain being due to lesions of the alveola that have been aggravated by some dental operation.

But there is a type of facial neuralgia whose factor should be looked for, not in a local lesion, but by some

distant influence; such is the super-orbital neuralgia that you will frequently meet with in syphilis, gout, chlorosis, dyspepsia or constipation. It is also frequent as a symptom of malaria and still more so of acute gastritis, but especially is this true of a poor general condition. Now, when you have eliminated the above etiological factors of your neuralgia, turn your attention to the genital organs of your patient, and very likely you will discover the cause of the trouble there.

Intercostal neuralgia appears to be one of the most frequent forms depending on lesions of the reproductive organs. According to Bassereau utero-ovarian affections are the most ordinary cause of the intercostal form, and Valleix, in his statistics, found this neuralgia more frequently in the female. But as is pointed out by Desnos, it would appear that in many cases there are intermediate affections existing between the genital trouble and the intercostal neuralgia, which is most often a gastro-intestinal lesion, and if you consider this fact for a moment you will recollect that these gastro-intestinal affections are often directly dependent on some genital lesion. Of fourteen gynecological cases suffering from neuralgia, reported by Villian, seven, or fifty per cent., were affected in the intercostal nerves.

Sciatica, according to many writers, is extremely frequent in diseases of the genitalia, although Villian only found two out of his fourteen cases suffering from this very painful affection, and he states that from other observation besides his own cases he

is of the opinion that it is not very frequent in gynecological affections.

It is to be remembered that I do not allude to large pus tubes or abdominal tumors pressing upon the sciatic nerve or invading it by metastasis, for as a matter of course these lesions produce alterations in the nerve that would provoke severe pain.

Villian reports one case of abdomino-lumbar neuralgia produced by a salpingitis, which had been present for a considerable period, and which after removal of the diseased adnexa was completely cured. When you think of the frequency of renal pains complained of by patients suffering from gynecological affections you must remember that this is not a neuralgia of the lumbar nerves. These pains are nothing like a neuralgia of the lumbar plexus, which is a very rare complication of uterine disease.

I have now put before you the principal painful phenomena which are met with in uterine affections, and it now remains for me to endeavor to explain their nature and outline the means of their cure.

I shall not insist on the differential diagnosis of these pains, as I think you will easily arrive at a correct conclusion in a given case, now that I have shown you that the fact exists.

But you may ask, are these pains really a neuralgia? In reply I would recall to your minds that a neuralgia should present the following fundamental symptoms, as has been pointed out many years ago by Valliex, viz.: The seat of pain must follow the track of a nerve, it must be paroxystical,

and lastly, it is greatly increased by pressure over the point corresponding to the exit of the nerve trunk. These latter are known as *Valliez's points*.

In the fourteen cases reported by Villain, these three symptoms were well-marked, and the pains sustained by his patients were not the vague type, seated in the muscles or in the viscera, such for example as lumbar pains, dull, continuous and not increased by pressure, which are so frequent in the case of uterine disease; it was along the track of the nerve that these patients felt the pain.

This character is common to both true and pseudo-neuralgia, which has been so well described by the regretted Charcot, and which depend on an intra-rachidian irritation of the nerve roots. As you know, in these cases pressure on the nerves produces no pain, and still more a painful anæsthesia is observed; and lastly the pains are usually *bilateral*.

All these symptoms are wanting in cases of neuralgia due to diseases of the female genital organs.

You may also ask if these pains are not due to a neuritis rather than to a neuralgia? The frequency of these pathological changes in the various infections, intoxications or cachexiæ, might lead one to suppose that it is a neuritis, but the term neuritis, that is to say a *material lesion* of the nerve, implies that it is a durable affection which *must* follow the cause which has produced it, as is seen in lead or alcoholic intoxication, severe infectious diseases, or following prolonged compression of the nerve trunk itself.

Then on the other hand, independently of the pain which is usually not very severe, a neuritis produces a series of trophic troubles, either of the skin or muscles.

Now in the cases reported of neuralgia due to gynecological affections, no trophic troubles have been noted, and what is to be particularly borne in mind is, that the nervous symptoms have quickly disappeared when the genital disease has been cured. Consequently, gentlemen, I believe it safe to profess that neuralgia, using the term in its full understanding, is a complication that is met with in women having lesions in the uterus or adnexa.

Now what is the origin of these neuralgias and in what manner are they connected with the pathological conditions of the uterus?

In the first place, every neuralgia is dependent on some *local* or *general* cause. The local causes need not be considered here, as in the beginning of this lecture I said that I should not take up those cases in which the nerves were directly influenced by the morbid condition of their neighborhood. The general causes may be considered under four groups, viz.: (1) the intoxications; (2) the diatheses; (3) the infections; (4) the various neuropathic conditions.

Of the first group I have nothing to say, as it is a subject rather foreign to this lecture.

Various dyscrasic conditions produced by anæmia, pregnancy, labor, etc., are in no manner infrequent in genital diseases of the female. The many forms of nervous diseases are often factors in the pathological con-

ditions of the female, as many reported cases demonstrate.

Let me first speak of the neuropathies. These may be divided into two classes, viz.: hysterical and neurasthenical. As you know, hysteria is a frequent cause of neuralgia; this is true of neurasthenia, but there is a distinction to be made between the two forms.

You will often have patients whose neuropathic heredity is marked, but who appear to have a perfectly normal nervous system, or nearly so. Other than a few peculiarities of character, and perhaps an occasional syncope, they can be considered as well. But when an infectious disease, a physical or moral strain attacks them, the equilibrium of their nervous system is broken, and the *nervous subject* becomes a true and complete *neuropath*.

This is a phenomena similar to the toxic or traumatic hysteria, and what is true of hysteria is true of neurasthenia, only the former appears to more often accompany the more serious lesions, while the latter is a complication of slighter ailments. In genital pathology more or less severe nervous troubles are the general rule.

The nervous system of woman, being more delicate and impressionable, re-acts with greater intensity, and let me state that all gynæcologists have remarked that especially slight affections, such as metritis, are more prone to produce hypochondria and digestive troubles, which are so often connected with neurasthenia.

But a disease of the uterus or adnexa may occur in an hysterical or

neurasthenic subject, in which case the genital lesion will exaggerate the pre-existing neuropathic condition, and this latter state will itself re-act on the genital affection, rendering it and its treatment more complicated.

At any rate the question is not simple. From the fact that a patient with some uterine trouble is a hysterical or a neurasthenic and suffers from a neuralgia, a frequent symptom of both these neuroses, it does not necessarily follow that this neuralgia is of an hysterical or neurasthenical type. When you witness the simultaneous development of a uterine affection and a neuralgia in a *nervous subject*, who never before has suffered from the pains, and when you perceive that this neuralgia improves in direct relation to the amelioration of the genital lesion, I think that you will be forced to admit that the lesion of the latter organs certainly plays a part in the genesis of the neuralgia.

The important question for you is, if the neurosis is the real cause, it must be treated, but remember that the treatment directed against it may be bad for the uterine disease; or you may be persuaded that the neuralgia depends on a genital affection, and by a proper treatment the pains will disappear.

Under the term anæmia, I only understand that condition which has been produced by *loss of blood*. Prof. G. Sée has studied the question in detail, and only considers anæmia as present when due to a loss of blood. You all know how frequent neuralgia is in anæmic subjects, and as Romberg has truly said, "neuralgia is the cry

of distress of the nerves, asking for a richer blood." The exact manner by which anæmia produces painful phenomena in the nerves is as yet not completely demonstrated, although it may be surmised, given the results of experiments. An animal which has been freely bled will have convulsions, which is nothing more than a symptom of an irritation of the motor nervous system. But the animal gives no clue as to the sensations that it experiences; but it is most probable that the sensitive nervous system is also irritated, although in a lesser degree.

Considering now those patients who do not present any former neuro-pathic taint, and who have not had metrorrhagia sufficient to produce anæmia, it is evident that their neuralgia should be considered as *sympathetic*, providing that this term is employed scientifically, in other words a reflex phenomenon.

It is by this supposition that may be explained the sciatica of women suffering from uterine affections. The irritation is first produced in the collateral branches of the sacral plexus, and from there extends downwards into the sciatic nerve.

But it is not possible to give such an explanation for painful symptoms

occurring in nerves far from the genital organs, such as the trijeminus for example, or the intercostal nerves. In neuralgia of the latter, gastric disturbances may serve as an intermediary, as in a case reported by Villian, of a woman who had suffered for some time with dyspepsia, and whose intercostal neuralgia disappeared when the uterine affection (a fibroid tumor) was relieved, although the condition of the stomach remained as before.

The only explanation that I am able to give you is, that these distant neuralgias are of a reflex nature, the nerve attacked by reason of the habits or antecedents of the patient, having become a *locus minoris resistentiæ*. That they do depend upon a lesion of the genital organs is beyond a doubt, as many cases show.

As to the prognosis I have little to say, other than that a proper treatment directed to the true factor of their production will surely put an end to them. This will be accomplished when you have eliminated all the ordinary etiological factors of neuralgia in general, and an examination of the reproductive system will show you that it is the seat of some pathological condition.

Indications for Total Hysterectomy.*

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I CAN vividly recall to mind the able discussion which took place at Washington in 1887, during the meeting of the ninth international medical congress, on the subject of extirpation of the uterus for relief of carcinoma. Since that time my attention has been more particularly directed to the subject. At the time that the treatment of cancer by extirpation of the uterus was brought before the congress, I felt that the advocates of the measure had taken an advanced step. We all now recognize that the various procedures necessary in abdominal surgery have been more carefully considered, and that the individual experiences have tended to do much toward placing that kind of work on a firmer basis. So far as statistics are concerned as to the results of the different cases treated, they cannot afford any very definite help; for in dealing with any case in which hysterectomy is indicated, we shall find that the result will depend on many and often upon diverse factors, often upon the individual skill of the operator, upon a wise selection of the case, careful discrimination and accuracy of diagnosis, upon a full appreciation of the

fact that the morbid process to be relieved is the chief offending cause of the illness, and that there is not some more obscure and dangerous lesion that may give rise to the suffering. Assuming that these conditions have been met, the success of the case may often depend upon the facility with which the method of technique can be carried out.

The results achieved by the method of operating by the employment of the hysterectomy staff have led to the consideration of the use of other means for overcoming the difficulties encountered in a total hysterectomy. We are still more fortunate in having brought to our attention the perfection of other devices, the proper employment of which can greatly facilitate the most difficult part of the operation and give assurance that the entire cervix in a vagino-abdominal hysterectomy may be removed without incurring danger to the para-cervical structures. By means of the intra-uterine stem attached to a disk or cap as a centre for hermetically sealing the parts from the foci of infection, and also of a staff to assist in elevating the uterus and the morbid mass to be extirpated, as devised by my friend, Dr. A. H. Tuttle, we are enabled to remove by total hysterectomy many tumors, neoplastic devel-

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opments, and to relieve other conditions that have been deemed most difficult to overcome by the older operative measures. From the help that may be thus gained, and from experiences in other directions, it is not unsafe to say that total hysterectomy is indicated, *cæteris paribus* in cases in which the uterus may be in a position opposite to that of prolapse, and in such a state of immobility superinduced by previous inflammatory processes affecting the adnexa and producing such adhesions of those parts as to necessitate for relief operative interference. In an operation for overcoming the adhesions it will be found that the appendages, by the previous morbid condition that had been set up, have undergone destructive degenerative changes. In deciding in such cases that total hysterectomy should be attempted, the question of moral consideration will not be involved, for the reason that the uterus itself will, in all probability, be found to have lost its functional activity. By the facility with which the whole organ can be removed by the operator's adopting the improved methods of technique, the dangers usually attendant on the carrying out of such radical measures will be greatly lessened. Total hysterectomy should be had recourse to in cases of rapidly growing interstitial fibroids, or in cases of large subperitoneal growths developing from a broad sessile base. The operation is indicated not only from the hæmorrhage which they occasion, but also from the pressure which may take place upon the surrounding parts, and from the obstruction they

may produce in the vascular tissues, the abdominal and pelvic organs. Palliative measures of treatment, including employment of electricity, may be helpful in overcoming hæmorrhage, but the adoption alone of such a course of procedure must necessarily prove disappointing. The importance of resorting to total hysterectomy will be appreciated when the real history of the degenerative processes of such tumors has been more carefully considered.

If a large and rapidly growing fibroid should take on a retrograde process, either spontaneously or through the influence of regular and systematic treatment by electrolysis, or otherwise, the positive ultimate dangers arising from the presence of such a growth will be far from being wholly removed; for in such a stage, when the patient is seemingly improving, the morbid growth may afford a culture chamber into which other disease-cells may migrate and then undergo a malignant degeneration. In such a condition total hysterectomy is the only expedient that will afford a complete and permanent cure. A fibroid tumor developing in the interstitial and parietal portions of the uterus may so extend as to involve the entire body of the organ, overlapping and enclosing in large measure the adnexa, and, taking a downward course, include and bury the cervical structures also. In this condition the morbid growth involving the uterine structures may elevate itself from the lower pelvic cavity and thus afford a greater facility for removal through an abdominal section. This was the special feature in

one of Dr. Tuttle's cases, to which I was also called, when total hysterectomy was accomplished by a vagino-abdominal incision.

The removal of a fibroid should not be deferred because it appears or is first observed at or near the menopause, for it is not infrequent for such a tumor to continue to develop long after the occurrence of that period, and it may assume all the phases and present all the untoward results that are attendant on one that has had an earlier beginning. Treatment of fibroids by a resort to salpingo-oöphorectomy, to say the least, is of doubtful utility. This method for awhile may give seemingly beneficial results; when it does so, it is evidently because the growth is principally sustained by the ovarian artery; in other cases the results following this method are so unimportant that an operation would seem to offer but little advantage. There are undoubtedly many cases of fibroids in which the nourishment is at certain periods of their growth derived chiefly from the uterine artery. There are also cases of uterine myomata, in which the physical condition of the patient will not warrant a resort to hysterectomy. In this class of cases the method adopted by our president, Dr. Franklin H. Martin, of ligating these vessels, has proved to be of considerable service. With our advanced knowledge, however, of the pathology of these neoplasms, and with our increasing experience and achievements in abdominal surgery, we should not advise a woman who is comparatively free from disease except from the effects which a fibroid may have

occasioned, to rest content with merely submitting to such an uncertain surgical measure.

A nodular fibroid of a slower growth should not be regarded with unconcern, for the pressure that may be made by the mass upon the surrounding parts, and especially upon the ureters, may cause chronic oedema and finally contracted kidney, as did once occur in one of my own cases, in which the autopsy showed that had the growth been removed the renal lesion could undoubtedly have been avoided and the patient's life been saved. In this connection it might be remarked that the effects of pressure are to be considered, aside from malignancy, as among the most baneful influences that are attendant on the presence of uterine and ovarian tumors. Uterine myomata in all their various stages call for removal; this should be effected as early as possible. In certain cases the curette can be advantageously employed; if this method is unsuccessful, hysterectomy should be the next surgical expedient. In one case in which a multilocular fibroid appeared, there was but little enlargement of the uterus.

Hegar's method for removal of the uterine appendages was performed by a distinguished surgeon resident in another state; the patient, however, did not recover until after the lapse of six years, when she submitted to total hysterectomy. The ordinary methods of treatment of the more extended forms of adenoma frequently prove unavailing. The study of the pathology of adenomatous formations, shows that the hyper-

trophy of the glands of the lining membrane often extends throughout the entire cavity of the mucous lining. When a uterus has been once affected with this kind of morbid process, and the condition does not speedily yield to curettement and to other milder measures of treatment, a more radical course should be instituted. Total hysterectomy offers the best advantage for permanent relief. After sarcoma in any part of the uterine system has been suspected to exist, it should be an indication for action; its malignant nature and its unfavorable tendencies, when viewed according to the present light afforded by the pathological history, is unquestioned. As in the early stages of cancerous disease, before the parauterine tissue has become involved in the morbid process, so in sarcomatous developments, partial removal by the supra-vaginal method will prove inadequate; nothing less than total ablation of the uterine tissue, including the entire cervix as well as the fundal portion, should for the most part be deemed sufficient for a cure.

The question has been asked, should hysterectomy be resorted to for ovarian tumors? In answer to this it may be stated that carcinoma appearing in the ovary is almost always dependent upon the disease previously occurring to some extent in the uterine tissue. Not long since I was called to a case in which the adnexa had a year before been removed for what then appeared to be a malignant condition of those parts. Since that time the uterus and the parametrian tissue had become extensively involved. Had total hysterectomy

been carried out at the time of the first operation, before the cancerous elements had advanced, the patient could undoubtedly have been saved.

According to later observation and experience, sarcomatous developments occurring in the ovary should be promptly removed; this can best be effected by total hysterectomy. When papilloma and fibroma, occurring as ovarian tumors, are recognized at an early stage of their existence and before they have extended downward to the neighboring tissues, they should be thoroughly and promptly removed, even if it has to be done at the sacrifice of the uterus and its appendages. It should be here stated that carcinomata and sarcomata in all their various forms call for immediate and thorough removal as soon as a diagnosis of the condition can be made.

Experience, however, shows that the results following the removal by hysterectomy of a sarcomatous growth when the operation is undertaken in a late stage of its existence will prove to be more satisfactory than will those that may be attendant on the removal by this method, of a cancerous mass at a similar stage of its existence.

Total hysterectomy is absolutely necessary for uncontrollable prolapse, after anterior and posterior colporrhaphy and other plastic operations have been repeatedly tried but have failed to produce permanent relief. In such cases the vaginal method is the operation to be preferred. Total hysterectomy is the only safe surgical expedient to be adopted in cases of

hæmorrhagic polypi which present suspicious microscopic appearances after removal, and which leave as a result an enlarged uterus, as may be determined by palpation or by the sound. Hysterectomy is called for in ectopic pregnancy; in such cases the hæmorrhage can be more safely controlled, and the patient is enabled to make a more rapid recovery than by the other methods of procedure. This method of treatment should be undertaken in ovarian abscess, in pyosalpinx, in old inflammation of the appendages, in a post-clinical severed uterus which has been productive of pain and has been a source of disablement. The operation should be resorted to in all suspicious diseases of the adnexa and in cases of large cysts as well as in papillomatous developments and in otherwise irremovable cysts and intra-ligamentous fibroids and tumors of the broad ligaments. Later experiences show that total hysterectomy can be accomplished with as little danger as may be attendant on many other important surgical measures. When properly performed there is often but little tenderness left about the vicinity of the broad ligaments. When done in ectopic pregnancy, in ovarian abscess, in pyosalpinx and in purulent liquifaction of a uterine fibroid, better drainage can be established. On the other hand, when the uterus or a portion of it is left the condition resulting is liable to be followed with many complications, with uterine catarrh, malignant degeneration, certain neuroses and with other sequelæ of a painful or of a clinically depressing nature. Another advantage total

hysterectomy insures is that the posterior and anterior folds of the pelvic tissue can be brought together and united by suturing so as to secure better results than when other surgical methods are employed. In bringing these folds together after the uterus has been totally removed their margins can be turned outward and downward; this arrangement of the parts will thus practically invest the operation with all the advantages that can be secured by the choice of the extra-peritoneal method.

I have already stated that the vagina is the natural avenue through which an uncontrollable prolapsed uterus may be removed.

This avenue for removal should be especially chosen when the uterus is not enlarged, or when the condition of prolapse is not complicated with the presence of a fibroid or other tumor. In such cases the technique of the operation may not be as difficult to carry out, and the patient may not be exposed so long to the influence of the anæsthetic as by other methods. The consequent shock will therefore not be as great. The same method may occasionally be recommended when hysterectomy is indicated for a cancerous affection which has not extended beyond the cervical portion of the uterus. In those cases, however, of cancer, in which the fundus is involved, total ablation of the uterus can best be effected by the vagino-abdominal method.

I am not unaware that statistics have been brought forward to show that the adoption alone of vaginal hysterectomy, when undertaken by

certain operators, has yielded exceptionally good results. In all reports in which such records have been established by work accomplished on a large number of cases, I have often

felt that the many favorable terminations were, after all, but mere coincidences, or that only those cases for operation were selected that would be advantageous to the showing.

The Vaginal Route for Operations of the Pelvic Viscera.*

ABSTRACT.

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SOME years since all or nearly all operations on the supra-vaginal structures were done *per vaginam*. Following this came the craze for abdominal section, which in conjunction with aseptic methods, led to the most brilliant achievement.

Pelvic pathology was also revolutionized. Meanwhile the French devised and perfected a technique for vaginal hysterotomy. One of the rules governing the selection of cases for this operation was that the uterus should be so movable as to be easily drawn down to the vulva. Pean then conceived the idea of removing the unmovable uterus. This was the signal for a storm of antagonism. The operation was denounced as a wanton and wicked mutilation, and treason to all the better instincts of humanity. The reply is: "A womb without tubes and ovaries is of no value. From a physiological standpoint, the uterus is simply a nest for the reception and maturation of the egg; without appendages

it is of no more account than a deserted bird's nest. From a pathological standpoint it is a hot-bed of infection. As a diseased organ in the midst of diseased tissues, it blocks the way to a free and natural drainage."

General pelvic infiltration and multiple pelvic abscess, as the result of sepsis, has always been the bane of the abdominal surgeon. He knows that he must reach tubes and ovaries and pus cavities through coils of agglutinated intestine and jumbled viscera. He knows that the adhesions are often dense, that the tissues are often soft and friable, and that rents in the bowel or bladder are likely to occur. He knows that the evacuated pus frequently inundates the peritoneal cavity, and wells up through the abdominal incision; that in draining he must drain against gravity. He knows that the immediate mortality is great, that convalescence is tedious, that many cases never fully recover. He knows that ventral hernia is almost a common sequence, that painful scars are even more so. He knows that the intra-

* Read before the Ohio State Medical Society, May 16, 1895.

pelvic structures are often matted and distorted, that intestinal embarrassment or obstruction is frequent. He knows all this and much more.

In the trans-vaginal operation the pelvic viscera, other than the uterus and appendages, are not disturbed. There is no handling of intestines, consequently but little shock. No breaking up of adhesions (except in so far as to liberate the uterus and appendages). No contamination of the peritoneum with purulent matter, but simply an elimination of irreparably diseased parts. These are taken from the central and under surface of the arch, and there is natural free and uninterrupted drainage. Under this all peccant matter is discharged, exudations absorbed, adhesions dissolved, resolution and restoration complete. The patient is well. The mortality is less than by any other method. There is no hernia, no painful scar, no sense of insecurity, no languishing to a long hoped for death.

For some years, under the domination of a passion for salpingectomy, every tube that could be made out to

have undergone pathological changes was condemned to the knife. We now find that under favorable conditions many of these ailments pass away entirely, while very few, indeed, pass to a condition absolutely demanding operative interference.

It was the dread of advanced cases of septic pelvic inflammation that impelled the celiotomist to attack the appendages at an early period. Relative to this it must be said the celiotomist extremity is the vaginal surgeon's opportunity. In other words, when the destructive changes of pelvic inflammation have gone to such an extent as to be practicably beyond the reach of the celiotomists, Pean steps in and by removing the uterus *per vaginam* makes possible a perfect recovery. Knowing this, the conscientious surgeon will keep hands off, reserving his resources for the dernier resort. As a result, thousands of women who have hitherto been sacrificed to the misguided zeal of the surgeon will resume the functions of health and maternity, and tens of thousands of children elsewhere unborn will add to the strength of nations.

Hysterectomy for Puerperal Infection.*

ABSTRACT.

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IN spite of the diminished mortality from puerperal sepsis brought about by the introduction of anti-septic and aseptic measures, many thousands of women die annually from

puerperal septicæmia. Outside of the large maternities, where favorable results have been obtained on account of the perfect technique, there still exists a large amount of septic infection following abortion or labor at full term. If to this be added the

* Read before the American Medical Association, May 8, 1895.

sepsis arising from accidental and induced abortions, it will be seen that no effort should be spared to perfect all methods of treatment for the relief of this condition. A clear conception of the pathology and bacteriology in the birth canal is highly essential. Bunm describes two forms of endometritis, septic and putrid. The septic process may be localized and germs shut off from the underlying tissues by a granulating zone, or this zone may be absent and the pyogenic cocci be found in the lymphatics leading to the peritoneum. In septic endometritis foetid lochial discharges may be absent. In putrid endometritis decomposed material and necrosis of the epithelial layer is present in the uterine cavity. The granulation is also present and acts as a barrier to the penetration of germs and their products. The putrifactive focus within the uterus favors a development of toxins, whose absorption into the blood causes sapræmia. Cases of puerperal sepsis may be divided into two classes: First, where general infection predominates; and second, when localized inflammatory deposits are present. The second class offers the best results from operative interference, because the products of inflammation are shut off from the general peritoneal cavity, and the surgical treatment of localized abscesses is followed, as a rule, by good results. When the broad ligaments are involved in septic absorption, true pelvic cellulitis and abscesses result. When there is a general purulent peritonitis resulting from absorption of germs, it usually proves rapidly fatal. All collections of pus in the adnexa or cellular tis-

sue should be evacuated with the least possible delay, either by way of the vagina or by abdominal incision. Can surgery prove of any avail in the other class of cases, where absorption is taking place from the interior of the uterus by way of the lymphatics, with a resulting general infection.

The cases of general infection are of two descriptions: First, when the veins and lymphatics at the placental site are loaded with germs; and second, when the presence of the granulating zone impedes further penetration of the cocci. In both, the symptoms are those of general septic absorption. A dull curette should be used in intra-uterine treatment to preserve the granulating zone. The treatment of these septic cases must be rigorous and thorough. The source of infection must be removed at once. Since differentiation of these two classes is almost impossible, the use of the dull curette and packing should be employed in all cases. The main diagnostic symptoms are: high fever, rapid pulse, possibly chills, and the history of the case. If curetting and packing with gauze affords no relief within twelve or eighteen hours, the only resort is removal of the uterus. If this be done early enough the patient may live. This radical procedure is not more radical than the disease is fatal if allowed to proceed unchecked. The removal of the source of the infection, if taken at an early stage, will be the means of diminishing the mortality of the cases. The more skilled the surgeon becomes in diagnosis, and the more expeditious the treatment, the better will be the results obtained.

Some General Considerations on Diagnosis in Gynæcology.*

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IT IS my wish at this time to call attention especially to two things:

First, the great desirability of devoting a larger proportion of time and effort to the attainment of diagnostic skill; and, *second*, the necessity to that end of studying more closely the actual state and condition of the local *system*, as well as its individual organs, under circumstances of apparently perfect or approximately perfect general and local health.

In order further to bring you more in touch with my subject, and before entering more definitely into its discussion, I may be pardoned for briefly presenting at once the essential features of three cases in illustration of my *point d'appui*.

Mrs. R., of my own city, had been a sufferer for several years from symptoms referable to the pelvic region, and been under the care of many physicians of local repute, both at home and in adjacent towns. She finally drifted into the hands of an eminent physician in our metropolis, who made an examination and gravely advised extirpation of the ovaries as a probable necessity sooner or later, in order to free her from her suffering and prolong her life. The husband of the patient, in view of the apparently but cursory examination

just made, timidly suggested the desirability of a perhaps more exhaustive investigation of the case, but was met with the dignified reproof that he (the surgeon) knew "just what he was talking about." Under some temporizing medication the patient did not improve, became disheartened, and came again under the care of a local practitioner. A consultation was finally decided on, and three members of the local profession examined the patient under the influence of an anæsthetic. The result was the discovery of unsuspected deep fissures of the anus and ulceration of the rectum. The sphincters were forcibly dilated, the ulcers kept clean, and to my certain knowledge the patient has been for two years a well woman.

Eight years ago Mrs. D., a young married woman, came under my care with a history of what might be called congenital amenorrhœa. More or less pain each month, but never any flow. During her virginity an eminent surgeon, in whose skill in all respects I had placed much confidence, had ascertained the existence of an imperforate uterus, and had made an unsuccessful attempt to establish artificially a patulous cervical canal. Neither cavity nor fluid was found, and the opening made was permitted to close, especially as a violent inflam-

*Read before the Illinois State Medical Society.

mation had developed, and the patient's life at one time had been despaired of. The examination made by myself revealed a somewhat extensive cicatrix in the smooth vault of the vagina, no cervix presenting; and without further consideration I concluded that the case was one of congenital abnormality, the uterus being quite undeveloped and incapable of, in any sense, performing its functions, and advised accordingly. Imagine my surprise and chagrin to learn that during the past summer the patient's true condition had been ascertained by another surgeon in my own city, an operation done and the patient's health restored. The fact was discovered that the vagina presenting was not the vagina at all, but an imperforate, extended, distended hymen, that had in some way become adherent to the cervix uteri, had been perforated at the point of adhesion in the first operation without striking the canal of the cervix, and formed the smooth cul-de-sac of the supposed vagina. Dissecting it out revealed the cervix and os uteri posteriorly, and after the detachment of adhesions the patient discharged a black, long confined, pent-up menstrual fluid, and has menstruated regularly ever since. I shall never again take for granted the truth of another's verdict without, when in my power, making an exhaustive personal investigation for purposes of corroboration.

Miss H. came to me for diagnosis and treatment. I shocked her with the information that I found the very unusual condition of double vagina and uterus, with slight endometritis and vaginitis of one of the tracts.

She continued, however, to be afflicted with delayed menstruation, the latter irregularity being supposed by her oculist to have some effect in disparaging her vision. The avowed anatomical peculiarity seemed to pray upon the patient's mind, and, having occasion to visit Chicago, she consulted a surgeon of some repute, who informed her that an operation of some (to the patient ill-defined) kind was necessary to cure her. Under the advice of friends she submitted at once. The surgeon evidently mistook the true condition for one of atresia of the vagina and made section of the vaginal and uterine septum. Such a degree of hæmorrhage resulted as to almost compromise the life of the patient, and so alarmed the operator and assistants that they, for a time, knew not what to do. They finally tamponed the canal with styptics and sent the girl home as soon as possible, with the information that the parts were found so grown together that they could not any more be separated, and commiserated with her on the fact that she had unfortunately delayed too long the great salutary measure that they had attempted to give her the benefit of.

It may be that in some things "where ignorance is bliss 'twere folly to be wise," but ignorance with the dignostician, I fancy, never meets with such transformation.

The cases I have outlined suggest rather lack of attention to diagnostic landmarks and careful scrutiny than downright ignorance; but, viewed in either light, they are rife with information and lessons of a practical

character, in that they evidence the necessity of careful, thoughtful diagnostic skill as the very best basis of a valuable reputation and a successful therapy.

No man in the profession has to such a profound degree my admiration and respect as the capable and accurate diagnostician. There is something so particularly sublime and satisfactory in the ability to successfully interrogate Nature, and wring from her, as it were, the secret of her innermost woes and most grievous burdens. There is something fascinating in the power of man to detect reserved anomalies, uncover hidden defects, and ferret out obscure pathological conditions. The ingenuity and far-reaching logic necessary to the definition of many chains of morbid influences are the key-notes to a successful therapy and advanced medicine. It is not the desire of the writer to, in this connection, be understood as courting a penchant for *surgical* investigation in the operative significance of that term. There are many good men yet in the profession who do not think it advisable to nearly always open a woman's abdomen in order simply to find out what is the matter. This is a wonderful age, to be sure, but it is not the part of wisdom to push one's bark too far out from the shore of conservatism. Whirlpools, cyclones, and storms of all kinds are likely sooner or later to overtake the too adventurous, and the cautious navigator stops not his ears to the ominous mutterings of the distant thunder. Even one of the princes of exploratory laparotomy in this coun-

try has recently felt himself called upon to decry the modern tendency in that direction which he himself helped to create and to make the statement in effect that he was becoming far more careful than formerly in the selection of his cases for that operation, and deplored greatly the misunderstanding which seemed to exist as to the necessity for such procedure. He believed it should be much restricted in its application. When the modern surgical Boanerges begin to call a halt it is time to stop in our mad career and thoughtfully view the field over which we have swept with the relentless precipitancy and impetuosity of a suddenly hopeful expedient. In the light of this and other facts, what is to be said in answer to the published reports of hundreds of laparotomies and ovariectomies being done by single individuals, in restricted localities, within a brief period of time? What is the obvious inference from such reports.

Even if the modern surgical technique is so perfect as to admit of loss of life in but one per cent. of the cases, the idea is revolting when prompted only by a desire to shirk more vigilant as well as less heroic measures. The necessary destruction of anatomical continuity—the necessary mutilation—is abhorrent to that scientific sense which seeks always to maintain the integrity of nature's handiwork, and attain to a knowledge of its imperfect condition through a correct observation and appreciation of its pathological activities. The ideal diagnosis, in other words, is the determination of spe-

cific pathological conditions through an accurate interpretation of correspondingly disturbed structure and functions, without resorting to a solution of continuity of any tissue—without producing a morbid condition in itself more or less an element of danger. Of course, I realize the occasional necessity for the radical measure. *Necessity* knows no law. I am arguing for a controlling *principle* of action. I am admitting the recognition of *such* procedure as above merely as a make-shift; as a *dernier ressort*, having its necessity born of present ignorance rather than of fixed fact; as an excuse for art's temporary inefficiency; a crude step in the development of the ideal scientific diagnostic skill.

In the diagnosis of gynecological affections, as of those of other systems of the human economy, the object is to determine the kind and degree of departure from the normal anatomical and functional attributes of the several organs, and their relationship to each other, without the involvement of serious disturbance. In the instances cited in the introduction of this subject there was really no valid excuse for the error in diagnosis in either case. A thoughtful comparison of conditions presented, with the procurable knowledge of the normal standard, would have had, should have had, and finally did have, the effect to solve the pathological mystery and therapy of each case. Such should serve as most impressive warnings to an inculcation of the habit for which I am contending: that of *being certain* as far as one goes, and going as far as one ligiti-

mately can. It is always better by far to confess obscurity when it exists than to assume a position false in fact. The man who *knows when he does not know* is a valuable man. Such a one's judgment and counsel in a case are as valuable in a way as that of the one arriving at an evidently conclusive result.

The man who knows for certain that in all known aspects the organs examined are free from disease is in a position to properly and successfully widen his field of observation in a given case, and sooner or later arrive at a conclusion based upon undeniable and incontrovertible evidence. Such a consummation must give infinite satisfaction and place the consummator in a most enviable position.

How can even the brightest intellect and most perfect tact determine an aberration if not practically familiar with the correct standard? To accomplish such purpose accurately in the field of diagnosis it is necessary to understand specifically the anatomy, descriptive and regional, and the physiology, individually and relatively, of the normal system. To the extent that such knowledge can be obtained is the power of the individual to determine the extent and nature of the aberration in disease. Without it his judgment is not to be relied upon. With it careful examination *must* more and more closely approximate the seat and nature of any deflection that may exist. As a matter of fact the study of the normal relationship and functions of the reproductive and associate organs of the female is generally of

as much interest and value as that of the abnormal. This introduces specifically and fully the second consideration, to which in the beginning I begged to specially direct your thought—the great desirability of more thorough acquaintance, practically, with the appearance, positions, sensation, and functional activities of these organs in a state of health, not only individually, but as a *system*. The influence and result of such knowledge must, in the nature of things, be most effective and far-reaching. It will enable one to at once avoid the gross errors that are so common amongst the high and low in our calling. For notwithstanding the tacit recognition of this principle from time immemorial, my experience and observation have taught me the prevalence in the profession of the most lamentable ignorance with respect to the natural, *normal* appearance, position and palpable sensations of the female pelvic organs, as with respect to the color, form or location, the production of pain, or the development of sensitive spots under digital examination. Localities and parts that one finds normally sensitive to pressure are magnified into seats of congestive or inflammatory action and erroneously form the bases of grave prognoses. Normal degrees of fecal accumulation in sigmoid flexure and rectum are diagnosed as tumors of grave pathological import. The natural ligamentous structures are mistaken for bands of adhesion, and even the sacral prominence itself gravely held to be an abnormal growth, either scirrhus or fibroid in character. It would be amusing if it were not a

matter of such serious concern to witness the frequency with which such errors are committed. The gravity of the consequences involved is such as to affect one most forcibly.

Let the student of to-day study well the *normal* pelvic contents, and he will find himself armed against the possibility of error in physical examination of those organs and parts in disease. The recognition of deflections from the normal standard is the first great factor in diagnosis. Whilst the cardinal points in determining the successful application of that principle involve the subjective symptoms as well, their approximate status is at once settled by a determination of normal physical conditions locally. Anyone who has had much to do with diseases of women can realize the profoundly misleading character of the subjective symptoms often detailed. Pains and numerous distresses referable to the pelvic organs are innumerable, and as frequently as otherwise largely due to disturbances of reflex character, central or peripheral. But the condition of which the pelvic distress is an expression, whatever or wherever its origin, is as much a disease and as worthy of diagnosis and treatment as the most profound direct physical lesion discoverable. To the patient it is not a matter of the existence or non-existence of a morbid anatomical state, but one of suffering and its relief; and it is the duty and the province of the gynæcologist to know what *is* the source of the difficulty, or at least that primary lesion of the generative organs *is not* the cause, and thus eliminate from consideration a trouble-

some possibility. Only a thorough knowledge of the kind so persistently insisted on in this communication will suffice to secure the desired result. A thorough and accurate familiarity with the normal state, gained by repeated and exhaustive investigation through specular exposure, bimanual palpation, and chemical and microscopic examination of the secretions under differing influences, will enable one to discover and appreciate abnormalities of condition bewildering to the neophyte, or one whose education in that respect has consisted solely or mostly of the examination of diseased specimens, or the state of affairs in the cadaver. Disorders of the central nervous system, nutritive or otherwise, and diseased conditions of other organs of the body whose woes find expression in pelvic distresses, can thus be more nearly determined by exclusion, and further investigation turned in its proper channel. I am one of those who recognize the nervous system as *the individual*, and look upon all other tissues as in a practical sense mere appendages. Therefore, when I am not able to discover any lesion of the "end-organs," so to speak, I am at once prepared to refer the disordered functional expression, or existence of pain, to other causes either directly or indirectly affecting the quantity or quality of nerve energy. It is in line with this consideration that a study of the reproductive organs in the female, *as a system*, is advocated. Their inter-dependence in action we need a more definite understanding and appreciation of. The practical relationship of its parts each to the

other, and that of the whole to the general system, we need the better to understand. We are constantly learning more and more of the nutritive functions of the organism and the influence of nerve energy in their control. To anyone who will observe carefully the appearance, varying physical conditions and sensations accompanying physiological activities and changes in the reproductive organs of the female during the processes of menstruation and pregnancy, much of value from a diagnostic point of view will be obtained. It can then be appreciated how absurd is the idea that various local conditions frequently observed should be held alone responsible for grave sensory disturbances.

In order to reach a yet further and more accurate and ultimate result in the interpretation of pelvic pathology in females, exclusive of local influence, I wish again to urge the necessity for greater familiarity with the character of both the normal and abnormal secretions and excretions of the reproductive organs. It is impossible for me to refer to the characters of such in this connection, as I have elsewhere done, but the necessity for so doing is involved as a factor in the attainment of the specific diagnosis I am advocating. Aspiration, if need be, and careful catheterization of uterus and fallopian tubes will supply the means for the attainment of these desirable ends. The physician or surgeon who lives up strictly to the aseptic and anti-septic precautions of the period need not have any fear as to possible untoward results of such manipulations. With-

out such precautions the microscope can be of little, if any avail, in the direction indicated. With them it may be of untold value in many instances.

Although many practitioners have abandoned the use of the uterine sound on account of the *danger* in its application, and for the same reason have discountenanced if not condemned the use of catheter and aspirator, I stand here to earnestly and unflinchingly advocate the proper use of each and all of them. It is passing strange to hear condemnation of the use of these instruments from the lips of those who hesitate not to rip open the abdomen at a moment's notice, if they can only be assured of an exclusively aseptic atmosphere and armamentarium. *What harm can possibly come from the use of any of the intra-vaginal, intra-uterine, intra-tubal, or even interstitial paraphernalia, under a similarly aseptic regime?* The objections that have been urged in this direction are the veriest nonsense. They have had their birth in pre-antiseptic times and experiences, and been rocked in the same cradle that nurtured the despairing cry of "meddlesome midwifery." These notions were reared in filth, and should be relegated to the history of the past age, to which they rightfully belong. Don't let the fear of septic contamination of your patient through the medium of sound, catheter or needle, interfere with the

introduction of those instruments in a perfectly aseptic condition. To have them otherwise cannot but be counted criminal. To have them as they need to and should be, is to render them harmless and your patient perfectly free from any jeopardizing influence. If a Lawson Tait wants to persist in relying solely upon his finger as an ante-section diagnostic instrument, let him do so. But if you want to use the sound to outline an intra-uterine growth, differentiate a retroverted fundus from a uterine fibroid, or direct your catheter to the tubal entrance, you have a perfect right to do so, provided your instruments are as clean as his finger should be; and you will not thereby come any nearer removing a pregnant uterus in mistake for a fibroid tumor than some who have been less assiduous and more enthusiastic.

Let me repeat, in conclusion: aim at an accurate and decisive diagnosis in all cases. To that end study well the attributes of normal structure, form, position and association. To the right-minded physician no difficulty need be experienced in securing opportunity. Use all the means at your command, both natural and artificial, bearing constantly in view the ideal method, embodying preservation of tissue integrity and obedience to the aseptic and anti-septic principles of the age and time.

Obstructed Labor.—Stricture of Vagina.*

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SEPTEMBER, 1887, a married lady, aged 31 years, came under my counsel and supervision in her second confinement owing to alleged obstructive labor. Examination found the head of the foetus presenting in the second position and to be greatly enlarged with evidence of hydrocephalus; and further, that the child was not viable and labor had become powerless. The condition of the patient was one of exhaustion, temperature normal, but pulse 140 per minute, and apparently subservient to threatening failure.

The vagina had become irritable from frequent examination and attempts to apply forceps without effect, combined with antiseptic injections under a questionable theory of prevention, to a degree which became useless and even harmful; cleanliness and abstinence from uncalled for interference being overlooked under the idea of doing something.

The head of the child was opened and followed by a flood of water, and thence an easy completion of labor within a short time, the relief from pressure and resistance giving renewed vigor to uterine effort. The lochial discharge became very offensive at first, but was cleansed away

by use of large quantities of very warm water, and ceased to continue so.

There was no destructive change of vaginal tissue visible nor reported afterwards by others. Convalescence was reported to be uneventful, but it was evident after a few weeks that a new evil had arisen in a continuous flow of urine, and examination made it evident that the difficult previous labor was followed by the accident of a urethro-vaginal fistula. Operation was performed and complete restoration of normal function took place.

Contraction of parts of the vagina gradually attracted attention by its increasing obstruction to the sexual act. Nothing was done to obviate the abnormal change, although the parties were advised to adopt dilatation, especially as the liability to pregnancy might seriously affect the well-being and safety of the mother.

Several years of quiescence passed, when counsel was again sought in September, 1894, by reason of pregnancy, which had then been assumed to be in the third month and indications all led to its correctness. Careful examination revealed the external and internal parts, with structure of longitudinal columns and transverse folds of vagina, to be fairly normal in the lower half of the canal. Two

*Read at the session of the Iowa State Medical Society, April 17-19, 1895, at Creston, Iowa.

and one-half inches within was an abrupt occlusion of the vagina. It presented a firm, smooth touch, and surface like a cartilaginous or cicatricial band, which encircled the vagina and would admit the passage of but one finger by persistent pressure. The tissue between it and uterus was soft and yielding, but could not be defined with certainty. It was construed to be an alteration of mucous and erectile tissue in consequence of the difficult labor of seven years before and subsequent neglect of prevention. The situation, with attendant risks, was fully explained and manual dilatation decided upon, so far as that expedient might avail, instrumental interference being reserved for ulterior necessity. During three months a treatment by dilatation with fingers and hand was employed from ten to twenty minutes at first three times each week, afterwards lessened to twice and once a week, and finally still less, as the contracted tissue yielded until it appeared nearly or sufficiently safe to abide the result at full term. Considerable force was applied during each effort, much pain ensued, and some blood followed every operation. Between the periods of dilatation fine sponge was firmly packed within the constriction to aid and to continue the effect produced by the hand. Labor came on per-

haps two weeks prematurely, and during that process the stricture was carefully attended to with a view to sufficient dilatation. Excessive obliquity of the uterus at first prevented reaching the os, but its relaxation led to protrusion of the membranes, which fell into the stricture and acted as an aid. Nothing was done to hurry a movement of the parts implicated, and gradual accommodation was sought for. The stricture was under constant pressure from above and below, and after some eight or ten hours of positive effort, after twenty-four hours fruitless delay, labor was completed with safety to the mother and with a living child. Risk of the knife and forcible dilatation by instrumental application were duly considered, and the hand with its tact and touch proved sufficient, although at the expense of time and painful, wearisome effort, on part of physician as well as of the patient. Labor was apparently aided by moderate chloroform anæsthesia, which seemed not only to smooth the way for the patient, but to conduce to the relaxation of the parts implicated.

No injury was done to the vagina or parts adjacent, and recovery was complete, although the present condition is unknown, nor is it especially essential in this particular case.

Supra-Pubic Puncture of the Bladder in Overdistension of the Cyst, Complicating Delivery.*

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THE operation known as "paracentesis," or tapping, for various purposes, has of late been discarded by many prominent operators, abdominal section and free incision with drainage, in appropriate cases, having to considerable extent replaced the old operation.

There are, however, cases in which there is no infection, and subsequent drainage is unnecessary or would be harmful. In these cases aspiration or puncture is the legitimate, in fact the ideal operation.

The title of this brief paper was suggested by a case of this kind occurring in my practice, the details of which are as follows:

A young negro woman had been in labor for about sixty hours, without any professional help other than an ignorant midwife. An examination showed the os uteri to be fairly well dilated, and the head engaging the upper brim of the pelvis. The patient was in a very nervous and exhausted condition, pains weak and irregular. The suffering was so severe that a nerve storm simulating eclampsia appeared at the approach of every pain. A soft edematous tumor could be felt in the median

line of the abdomen in about the normal position of the bladder, the gravid uterus occupying a position to the right of the median line, the fundus being furthest removed from the normal axis. Upon making a physical examination, the edematous fluctuating tumor proved to be an overdistended bladder, partially overlapping the uterus, the two organs not being in normal co-adaptation. As nearly as I could ascertain the patient had not voided her urine in thirty-six hours or longer. I at once tried to catheterize the patient, but failed. She was then thoroughly anæsthetized with chloroform, and all attempts to pass a catheter again failed. An operation upon the bladder was advised and readily consented to. The abdomen was cleansed with Johnston's Ethereal Antiseptic Soap; an incision one centimeter long was made through the skin and fat with a small scalpel, a little to the left of the median line, moderately low down. A small silver trocar two millimeters in diameter was then thrust into the bladder, and two quarts of urine was drawn off. The use of so small a tube occupies some little time, but this is more than compensated for in the success that attends the use of small tubes. The

* Read before the Texas State Medical Association at Dallas, Texas, April 25, 1895.

trocar was removed, the external wound well washed with a five per cent. solution carbolic acid, closed with a single carbolized silk suture, and dressed with a layer of iodoform gauze and borated cotton, held in place with strips of adhesive plaster.

The anæsthesia was continued, forceps applied, and the child delivered. The next morning I succeeded in passing a catheter and drew off the urine, after which there was no further trouble. The patient made a rapid and uninterrupted recovery.

The probable cause of retention in this case was an anatomical anomaly in shape of a double bifurcated uterus, the right half being the recipient of the foetus, which occupied very markedly the right side of the abdomen, and as labor progressed, the downward pressure being out of the normal axis, produced a kink in the neck of the bladder, thus obstructing the flow of the urine and resulting in retention.

While the use of trocar and aspirator for many troubles is not the best practice, there are other cases in which free incision, the admission of air and handling, is equally bad practice. It would seem that in properly selected cases the use of a small aseptic trocar cannot but be attended with the best possible results. Some care is necessary in performing this operation; like most other things, there is a right way and a wrong one.

I. The site of the operation should be made perfectly clean. There is nothing better than Johnston's Ethereal Antiseptic Soap. A similar preparation can be made by dissolving good castile soap in dilute

alcohol, adding a little ether and your favorite antiseptic.

II. Your instrument should be aseptic. Dry heat is perhaps the best sterilizer, although a ten per cent. solution of carbolic acid is good.

III. The sight of the operation is important. As a rule, the thinnest part of the abdomen and where the bladder is in direct contact with the walls, is the place to choose, and this should be low enough down, that, as the distended cyst becomes emptied and contracts down, it will not detach itself from the trocar, in which case you would fail to completely empty the cyst; and, occurring before you were ready, might contaminate the abdominal cavity with the urine remaining in the trocar, all of which is avoided by puncturing low, holding the outer end of the trocar slightly below the puncture; and, if need be, a small piece of rubber tubing placed over the outer end of the trocar will, by gravity, remove the urine that might remain in the trocar.

There is absolutely no leakage through the wall of the bladder when the trocar is removed. The walls of the cyst being stretched when the puncture is made, the organ contracts; and its circular and longitudinal fibers having a different degree of contractibility, close the small puncture like a valve, the thick mucous coat slipping by the muscular coat.

Of the peritoneum, we must say: all things being equal, the danger of traumatic peritonitis is directly proportional to the amount or extent of injury it sustains. Should the peri-

toneal fold dip low, or the puncture be made high enough to wound the free peritoneum, the slight injury it

sustains with a small tube is not likely to be followed by any serious trouble.

On the Rate of Growth of Ovarian Tumors.*

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THE commonest of all queries made by a patient with a large ovarian tumor is this, How long has the tumor been growing? The question is in most cases prompted by the circumstance that the patient has experienced no obvious derangement of health, felt no inconvenience, and perhaps by mere accident notices that she has grown unduly stout, or detects a decided asymmetry of the belly. In many, very many instances such deviations remain undetected until an attack of pain, due to the incidence of some complication, induces the patient to seek professional counsel and is submitted to physical examination.

I have been able to satisfy myself that ovarian tumors, even the complex dermoids, do occasionally arise and grow with great rapidity. Of the three varieties of tumors which arise in the egg-bearing section (oöphoron) of the ovary, viz., simple cysts, adenomata, and dermoids, I have been able to obtain definite observation concerning each, which serve to demonstrate what would naturally be inferred, that simple

cysts grow with far greater rapidity than the adenomata and dermoids.

1. *Simple Cyst.* In May, 1892, Dr. Butler Smythe removed from a woman an ovarian (oöphoronic) cyst containing thirty-four pints of fluid; during the operation the opposite ovary was examined and found to be normal in appearance and in size. In the following November pregnancy was recognized and delivery at term occurred July, 1893. In the following September an ovarian tumor was detected and ovariectomy performed a second time in October, 1893. The cyst contained thirty pints of fluid. We know from many recorded cases that there is nothing unusual in thirty-four pints of fluid accumulating in an ovarian or a parovarian cyst in a few months after spontaneous rupture, or tapping, but I am unacquainted with any other case in which a cyst containing so large a quantity of fluid arose and attained such proportions in an ovary, known by actual inspection to be of normal size seventeen months previously; that the ovary was capable of discharging its function subsequent to the first ovariectomy is proved by the most positive of all

* The Clinical Journal, June 19, 1895.

evidence, viz., that the woman became pregnant.

This case clearly demonstrates that *a cyst may arise in a healthy ovary and attain a dangerous size within seventeen months.*

2. *Ovarian Adenoma.* In August, 1891, I removed from a single woman, forty-eight years of age, a large adenoma of the left ovary; a loculus of the tumor had burst, probably some weeks prior to the operation, and a large quantity of colloid stuff had accumulated in the peritoneal cavity. During the operation the right ovary was inspected; it corresponded in size and appearance to the ovary of a woman at the menopause. The patient had ceased to menstruate a year previously.

During the three succeeding years this woman followed her occupation—that of a cook—without let or hindrance. In Feb., 1895, whilst vomiting she felt sudden pain in her belly, and subsequently noticed herself become unduly stout. Two months later she sought my advice, and on examination I detected an ill-defined tumor. She was admitted into the Chelsea hospital for women, and I performed ovariectomy. On incising the parietes a large quantity (four quarts) of thick jelly-like stuff was encountered and removed; then the shrunken remnant of the tumor, which proved to be an adenoma of the right ovary, was drawn out, ligatured and removed. The remains of the colloid tissue were washed out with a full stream of water at 110° F. Recovery was rapid and complete. In this instance we have positive evidence that *a complex glandular tumor,*

containing at least four quarts of colloid stuff, may grow from an ovary of natural size within a space of forty months.

Ovarian Dermoid.—The following case is recorded by Flaischlen: In May, 1887, Ruge ovariectomised a woman, removing a cyst as large as a child's head, which had arisen in the left ovary. The right ovary was inspected and found to be natural.

In June, 1888, a tumor, the size of a fist, was detected on the right side of the pelvis. In December, 1890, laparotomy was again performed, and a dermoid containing hair and teeth removed.

In this case the evidence is decisive that *a dermoid may arise in the ovary and attain dangerous proportions in an adult woman within the space of three years.*

That a tumor containing hair and erupted teeth should be produced in the course of three years is not inconsistent with the rate at which these organs are formed under normal conditions. For instance, the period between the fertilization of an ovum and the eruption of the milk incisors in man is about fifteen months; in exceptional instances children are born with incisors above the gum. In such cases the process occupies less than nine months.

The facts in Ruge's case throw some light on the instances of double ovariectomy during pregnancy, in which both ovaries were metamorphosed into dermoids, and the surgeons have been puzzled that ovaries in such a condition should be capable of yielding eggs. It is not improbable that the conversion of the ova-

ries into dermoids was coincident with, and perhaps in a measure encouraged by the concurrent pregnancy.

Certainly the fact that a typical dermoid may arise in an adult ought

to be sufficient to convince the writers of elementary text-books on *Diseases of Women* that ovarian dermoids are not due to inclusion of surface epiblast.

Two Cases of Placenta Prævia Centralis treated by means of Champetier de Ribes' Bag.

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THROUGH the kindness of my neighbor Dr. Jessop, I had the pleasure of assisting him with two cases of central placenta prævia in one week, and the facility with which this complication was met by the employment of Champetier de Ribes' bag makes them worthy of record.

CASE I.—Mrs. M., aged twenty-six, a primipara. As an unmarried girl had been regular until the year preceding her marriage, when for some months she lost a small quantity of blood more or less constantly but without pain or the presence of clots. This bleeding, however, disappeared more than two months before her marriage, during which time she was twice unwell in the regular manner; she had two normal periods, moreover, after her marriage. The last day of the last period was Feb. 18, 1894. Her pregnancy was normal till the end of September, when she had a slight hæmorrhage which lasted for twenty-four hours. On Nov. 15, she had occasion to get quickly out of

bed and to run up and down stairs. When she got back to bed she was sick and felt pain. At 11 a. m., whilst in the closet, had a sudden gush of blood, and during the next hour lost a considerable quantity, but by the time the doctor saw her the hæmorrhage had stopped. When seen in the evening, with the onset of moderately severe pains there was tremendous loss of blood, which quickly blanched the patient.

At 10.30 p. m., on examining her, I found the os rather larger than a shilling, and occupied entirely by the placenta, though it was possible to reach the membranes by directing the finger towards the left hip. Dr. Jessop gave chloroform, and with antiseptic precautions a Champetier de Ribes' bag was introduced in the direction in which the membranes had been reached. The fœtal heart could not be detected by either of us. By 5 a. m., on the 16th, that is about six hours after its introduction, the bag was found to be well down in the

vagina and probably already escaped from the uterus; it was therefore emptied and withdrawn. The os was almost fully dilated, so that the membranes were ruptured and the delivery effected by forceps without further difficulty, the placenta being expelled about aquarter of an hour after the birth. The after progress of the case was perfectly satisfactory.

CASE II.—Mrs. O., aged twenty-four, third pregnancy. Has had no trouble with her previous labors, and her menstrual periods have always been regular and natural. She has lost count of the date of the last menstruation, but thinks it was at the beginning of March, 1894. All went well till Sept. 20, when the first hæmorrhage took place, and at this time she lost a large quantity of blood and was in bed a week, though the bleeding stopped a day or two before she got about again. On Nov. 11 the next loss occurred, and was very profuse; she got up on the 13th, but had to return to bed, the loss continuing up to the introduction of the dilating bags.

When seen first on Nov. 22, 1894, the cervix was long, though sufficiently patulous to admit the finger tip readily, but as far as I could reach there was nothing to be felt but blood clot, and this smelt rather strongly. The size of the womb pointed to about seven months' pregnancy, and the position of the foetus was recognized as a breech presentation, the head being in the left hypochondrium and the feet somewhere about the umbilicus.

At 4 p. m., after giving a bi-

chloride douche, a Champetier de Ribes' bag was introduced and the patient left. Pains did not come on till 8 a. m. on the 23d, *i. e.*, about sixteen hours after the introduction of the bag. The pains continued steadily till 3.30 p. m., when they entirely disappeared; an hour later a hypodermic injection of ergotine was administered, and at 6 p. m., pains having returned, it was decided to evacuate the uterus. Dr. Jessop administered chloroform. The bag was emptied and withdrawn, and the cervix was found moderately well dilated, though there was still a rim. Nothing but placenta could be felt presenting in any direction, but by passing the hand between it and the uterus the membranes were reached and torn, and the right foot drawn down; a hand then presented but was pushed back, and the left foot extracted. There was some difficulty in delivering the head, but with the help of one blade of the forceps this was done, and a female child, apparently of seven months, delivered. After a little trouble it began to cry lustily. The mother's temperature was 99.4° with a pulse of 100, which fell after the delivery to 84 per minute. The placenta came away a few minutes later without any actual expression, the uterus being simply supported with the hand. The subsequent progress was quite straightforward, though the child died some twenty-four hours after its birth.

With regard to the employment of a dilating bag in the treatment of placenta prævia, the first thing to notice is the importance of antiseptic

precautions. The vagina must be well douched with bichloride solution, 1 in 2,000 or 3,000, and the interior of the cervix also, if this is filled with clot, as it was in the second case. On the completion of the third stage the uterus itself must be well washed out with the same solution. It is probably superfluous to insist that the external genitals must be rendered thoroughly aseptic before undertaking any obstetric or gynaecological operation. Secondly, it is important to note that, where labor has actually begun, as it had done in the first case, the bag must be introduced only in the intervals between the pains; and that it is to be passed in the direction in which membranes can be most readily reached, if there be such a spot.

It is interesting to notice that from the moment of the introduction of the bag there was no evidence of fresh hæmorrhage having occurred. In Case I. there was absolutely no more than a teaspoonful of blood lost from the time that the bag was introduced to the delivery of the child, and in Case II. such clot as came away suggested blood which had been some time effused between the placenta and the uterus, as it was very dark in color.

The pyriform shape of Champetier de Ribes' bag allows of its lying loosely in the neck of the womb in the intervals between the pains, and the fact that in these two cases the hæmorrhage was so slight after its introduction, would so far lend support to the view that the bleeding

takes place in placenta prævia during the pain itself, and that in the present cases this was obviated by the compression exerted by the bag being driven downwards on to the placenta by the uterine pains, at the same time as the os uteri was plugged by it. Moreover, the placenta itself is pushed over in the direction in which the uterus is being expanded by its contractions, so that the placenta is actually less severed from its uterine attachments. The great advantage of this bag is that it enables one to leave the patient in the care of the nurse whilst the os is being dilated. Its drawbacks are that, in the case of a head presentation, the bag is very likely to displace it to one or other side, and that the interval between the introduction of the bag and the commencement of labor is sometimes considerable. In spite of these disadvantages, however, owing to the facility with which it can be introduced, and the certainty with which it controls the hæmorrhage, the bag becomes a decided acquisition in the treatment of this complication. In those infrequent cases where severe loss takes place before a finger can be introduced into the cervix, the full-sized bag, as first introduced by Champetier de Ribes' would, introduced into the vagina and there distended to its full extent, plug the passage sufficiently to prevent loss, whilst the os was dilating enough to allow of the introduction of the bag within the uterus itself.—*British Gynaecological Journal*, Feb., 1895.

Abdominal Section for Puerperal Septicæmia.*

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(ABSTRACT.)

DURING February, 1887, there came under my care a patient presenting the history of puerperal septicæmia. An abdominal section followed, when the left fallopian tube and ovary were found distended with pus and were removed. The patient made a speedy and thorough recovery. To the best of my knowledge this case was the first one upon whom an abdominal section was deliberately and knowingly performed for puerperal septicæmia.

The case is an excellent representative of one class of patients suffering from puerperal septicæmia, upon whom an abdominal section is not only advisable but essential. The practice of removing the uterine appendages, which contain pus accumulations at this period of a woman's life, has become so thoroughly established since the report of the above case as to need but casual mention, whether that pus accumulation existed prior to the pregnancy or occurred subsequent to this condition.

So much for true pus cases; but there is another and larger class in which there is infection of the fallopian tube, the ovary, and possibly the peritoneum, without any forma-

tion of pus, but with more or less decided tubal and ovarian disease with peritoneal and connective-tissue exudate, easily demonstrable by a local examination.

In general, it is safe to say that in an attack of puerperal salpingitis and pelvic peritonitis dependent thereupon, no pus being present, an immediate operation is not demanded. Further, in those cases in which it is doubtful whether or not pus be present, the general condition of the patient permitting, delay is preferable, the patient being carefully watched, and a secondary operation, if necessary, performed later.

Infection passing from the uterine cavity through the fallopian tubes into the peritoneal cavity, and terminating in a septic or suppurating peritonitis, may be dealt with according to whether or not the inflammation remains localized or becomes general. The treatment of these intra-peritoneal abscesses would resolve itself into a very simple matter could the physician be certain that no pus was contained in the fallopian tubes or the ovaries. The difficulty here lies with the diagnosis, as in a large number of these cases no such assurance can be obtained. One line of treatment would be the adoption of ab-

* Read before the American Gynecological Society, May 27, 1886.

dominial section and evacuation of the abscess. The operation is no more severe and is fraught with no more danger than would be the opening of the abscess through the vagina, and has the additional advantage that if tubal and ovarian abscesses are found they are readily detected, and their removal can at once and intelligently be proceeded with.

Should, on the other hand, the peritonitis have become a general one, the patient, as far as we can judge from past experience, will inevitably perish. As exact and accurate intra-peritoneal diagnosis is more of a desideratum than a possibility, it were well in all cases where the patient does not seem beyond all chances of recovery to give them the benefit of the doubt in the diagnosis (however slight that may be) and operate. Not infrequently it may be found that a mistake has been made, and what was looked upon as a general peritonitis is more or less localized.

Turning our attention now to that form of puerperal septicæmia known as puerperal cellulitis, that variety in which the infection has found its way from the uterine cavity by way of the lymph channels and blood-vessel walls into the surrounding connective tissue, we are confronted by a much more difficult problem, and one which will no doubt produce a wider difference of opinion. The first difficulty which presents itself is the one of diagnosis. It may be stated that a large number of cases in which suppuration has not taken place may be ex-

cluded from the category of those amenable to treatment by abdominal section. There still remains, however, for our serious consideration, the suppurative group. With tubes and ovaries distended with pus we have already decided in favor of abdominal section and removal of the offending organs. If, in addition, the broad ligaments and pelvic floor be infiltrated and contain pus, why stop short of removing as much of the disease as possible and draining the balance.

Is there any method of incisions, either single or multiple, which will so thoroughly lay open and afford such thorough drainage of the suppurating tissues as the removal of the entire uterus? It is true that objections will be offered, and in fact have been advanced, that where the infection has once passed into the connective tissues the disease has ceased to be a local one, but has become general and is beyond reach. Has then the disease become a general one, as is contended by these gentlemen? By no means, at least in its reasonably early stages. The disease is essentially a local one until such time as the blood is so broken down by the absorption of septic matter as to longer preclude the possibility of life. When has that point been reached, is the question which must be answered, and it is one which it is by no means easy to determine. If the physician decides that provided there be no more absorption of sepsis the patient's chances for life are good, then it would seem that instead of wasting invaluable time in "building up" the

woman or "waiting," it becomes our duty to see that there be no more absorption; or if, perchance, it cannot be stopped altogether, that at least it be minimized. What way of accomplishing this is there comparable to the removal of the bulk if not all the diseased structures to total hysterectomy? As a rule, if anything is to be accomplished in this line, it must be within the first week or two, as experience has shown that either death or beginning convalescence is usually an accomplished fact by this time.

Equal if not more difficult cases to deal with are those in which no disease of the pelvic peritoneum, fallopian tubes, ovaries or connective tissue are demonstrable by an examination. The absorption of septic material is taking place from the cavity of the uterus, as demonstrated by the absence of all other cause, and the presence of purulent and foetid discharges. The so-called diphtheritic and gangrenous cases are of this variety. Intra-uterine douching, curettage, the free use of pure carbolic acid to the interior of the uterus, and drainage by gauze packing or otherwise, having failed to bring about a diminution in the high temperature and pulse, or after a few hours of diminution these begin to creep higher and higher, especially if the discharges continue, what remains short of hysterectomy to put a stop to the disorganization of the blood? In attempting to carry out these principles, two facts must stand forth with great prominence. If any great amount of good is to be

accomplished, the decision must be arrived at and the hysterectomy performed early—the earlier the better the success. In attempting to arrive at an early decision there will be the greater danger of operating upon patients who would otherwise have recovered without this interference. The greatest care and discrimination will consequently be necessary in deciding for or against the radical procedure, and the more skilled the physician in diagnosis the fewer mistakes he will make pro or con.

It must be admitted that the field for hysterectomy in puerperal cases is not a large one, but that it exists to a certain extent is patent. The success following this procedure has so far been encouraging, in spite of the fact that the number of times it has in the past been resorted to are not many. Puerperal septicæmia following rupture, bruising or twisting of the pedicle of neoplasms, complicating pregnancy and delivery, need only be mentioned to demonstrate the necessity of abdominal section and removal of the neoplasm for its relief. Rupture of the uterus can only be included in this same category, in spite of the fact that some few have recovered without operation.

Nineteen cases have been reported by American operators, with seven successes, and, although some of these successful ones might have recovered without the operation, still a careful study of the reports indicate that quite the reverse is probable.

American Association of Obstetricians and Gynæcologists.

PRELIMINARY program of the American Association of Obstetricians and Gynæcologists, eighth annual meeting at Auditorium Hotel, Chicago, September 24, 25 and 26, 1895:

1. President's annual address, J. Henry Carstens, Detroit.

2. Relation of pelvic suppuration to structural changes that may occur in the Fallopian tubes, A. P. Clarke, Cambridge.

3. Nephrorrhaphies, George Ben Johnston, Richmond.

4. Detached fibroids, George H. Rohe, Catonsville.

5. A clinical contribution to lateral displacements of the uterus, Edward J. Ill, Newark.

6. Appendicitis, A. Vander Veer, Albany.

7. Immediate treatment of puerperal sepsis, A. B. Miller, Syracuse.

8. Kraurosis Vulvæ, a contribution to its pathology and therapeutics, H. W. Longyear, Detroit.

9. Report of three recent cases in gall-bladder surgery, Edwin Ricketts, Cincinnati.

10. Subject to be announced, H. E. Hayd, Buffalo.

11. Intestinal obstruction following peritoneal operations, A. H. Cordier, Kansas City.

12. Subject to be announced, S. Y. Howell, Buffalo.

13. Cure of tubal distention without laparotomy, F. A. Glasgow, St. Louis.

14. Subject to be announced, W. B. Dorsett, St. Louis.

15. Subject to be announced, C. C. Frederick, Buffalo.

16. Hysterectomy in bilateral diseases of the appendages, giving remote results, Florian Krug, New York.

17. *Discussion*: Vaginal hysterectomy *versus* Abdominal section for pus tubes.

(a) Title unannounced, (affirmative,) X. O. Werder, Pittsburg.

(b) When shall hysterectomy accom-

pany bilateral removal of the appendages? Reuben Peterson, Grand Rapids.

(c) Pathological and surgical contraindications of the vaginal route in dealing with puriform diseases of tubes and ovaries, Joseph Price, Philadelphia.

(d) Title unannounced (affirmative,) Geo. H. Rohe, Catonsville.

18. *Discussion*: Eclampsia gravidarum.

(a) Etiology, Frederic Blume, Allegheny.

(b) Pathology, George F. Hulbert, St. Louis.

(c) Title to be announced, W. H. Taylor, Cincinnati.

(d) Prophylaxis, H. W. Longyear, Detroit.

(e) Puerperal convulsions *versus* Insanity. W. P. Manton, Detroit.

(r) Treatment, J. M. Duff, Pittsburg; A. H. Wright, Toronto; Thomas Lothrop, Buffalo.

19. Exhibition of various types of rectal papillæ, R. T. Morris, New York.

20. Subject to be announced, E. Arnold Praeger, Los Angeles, Cal.

21. Ruptured interstitial pregnancy, L. H. Dunning, Indianapolis.

22. Has gynæcology received just recognition as a specialty? M. B. Ward, Topeka.

23. Indications for operations in Puerperal Sepsis, L. S. McMurtry, Louisville.

24. Pneumo-peritoneum, James F. W. Ross, Toronto.

25. Subject to be announced, J. B. Murphy, Chicago.

26. Subject to be announced, Charles A. L. Reed, Cincinnati.

27. Subject to be announced, M. Rosenwasser, Cleveland.

The regular program will be issued September 1.

J. HENRY CARSTENS,

President.

WILLIAM WARREN POTTER,

Secretary.

SOCIETY PROCEEDINGS.

The Obstetrical Society of Philadelphia.

A stated meeting of the Obstetrical Society of Philadelphia was held June 6, 1895, Dr. George M. Boyd in the chair. Dr. Charles P. Noble read a communication on

APPENDICITIS OF MILD TYPE.

In this communication Dr. Noble directed attention to those cases of appendicitis, which ordinarily will recover without resort to surgical measures. Where the symptoms are not urgent, he advised treatment by medical measures, until it becomes evident that these will not result in cure. In the diagnosis he spoke of the liability of mistaking the symptoms produced by floating kidney with twisted ureter for those of mild appendicitis. The question of the social state of the patient is very often not without its influence in deciding the question of operation in these cases. He did not think that the existence of mild appendicitis always necessitated the performance of abdominal section.

Discussion.

DR. JOSEPH PRICE. — There is scarcely a physician present who has not had personal experience with this very common trouble; probably no more common at present than in the past, but now recognized more frequently, because physicians of the present day are better diagnosticians than they were a generation ago, and are able to make a more precise diagnosis than they were a few years ago. They are not satisfied with leaving a question in doubt, but try to make

out the exact nature of the pathological problem.

In his communication, Dr. Noble has alluded to palpation of the vermiform appendix. It is worth while for us to bear the anatomical relations of this organ in mind. A great deal has been said about palpation of the appendix, but it is simply impossible to map out the appendix in the acute suppurative forms of inflammation. To rely upon doing this is to make a diagnosis liable to cause injury. The appendix may be six or seven inches in length, and its free extremity may touch the kidney and be entirely posterior to the cæcum, where all the refinements of diagnosis will hardly reveal its existence. It is a fact that those who make the most of palpation have made the most errors of diagnosis. A certain New York author has written a good deal about palpation of the appendix and also palpation of the kidney; but his views are based upon speculation rather than on practical observation.

With reference to floating kidney, I would say that all the symptoms of floating kidney vanish after anchoring the organ.

With regard to the treatment, we have two schools; one is the operative school, the other the non-operative, the latter proceeding to treat appendicitis as a catarrhal condition. I belong to the former. I believe that every appendix that is dirty and filthy should be out. I have always found it so in operating for a suppurating cyst or a fibroid. Then there is another class of surgeons who

refuse to operate for the acute, increasing, septic forms of appendicitis. For instance, a prominent surgeon in this city says to physicians: "I would rather not be sent for in these acute suppurating forms of appendix disease." These are just the cases which should be operated upon promptly and not treated by medical means. Hot stove-plates and poultices are out of the question; they just cause the delay which leads to failure. I cannot for a moment counsel such a course of treatment. In this case delays are always dangerous. The diagnosis is either made or it is not made. If it is made, appendicitis is there, and an operation should be done; if it is not there, operation is not to be thought of.

Now as regards the method of operating and the results of the cases treated by the lateral incision. Take a septic form, with distention of the abdomen, nausea and vomiting—all these cases are failures with the lateral incision. We have, in appendicitis, two operations unquestionably: for simple abscess, with bowel movement, without distension and without peritonitis, there is the lateral opening for the abscess and drainage, which is a very slight operation—very little more than opening a boil. But in the acute form with increasing sepsis, the lateral incision is very little more than playing with the case. When I have such a patient I make a section followed by drainage, and it gets well. Only lately a case was reported in this room by a prominent physician, which was treated simply by incision and drainage. I hold that this is no treatment. The patients are simply dying from bowel obstruction and sepsis. The lateral incision is simply death to them. A short time ago this surgeon came to me and said: "I want you to tell me how to save patients who die two hours after operation." I say there has been no operation,

only incision and drainage. This still leaves the patient where he was before. The only operation to do is the central incision in the abdomen, making a complete operation with toilet and drainage, and the man will be saved. They are serious cases I will admit; but they can be saved by prompt operation by the right method.

The treatment of appendicitis will depend upon the nature of the case. I insist upon first grouping of the cases. In what is called simple appendicitis many of the cases are simply impaction and calomel; Rochelle salts and castor oil are sufficient to cure the case. These are the mild cases which are curable by simple catharsis. For these we might revive the old nomenclature of typhlitis and perityphlitis. In actual appendicitis the symptoms are so marked that the ordinary practitioners constantly recognize them. I find in going about all over the country, from Mississippi to the seaboard, that the general practitioner is able to make the diagnosis of appendicitis. In the last month I have gone to South Carolina twice to see such cases, and found the general practitioner correct. In both instances each had a gangrenous appendix.

I wish to emphasize two points: first, no operation should be done before the diagnosis is made. I have had numbers of patients sent to me for operation from the adjoining states for appendicitis, and have lost a small fortune by refusing to operate. I have taken them into the hospital and given them a cathartic, and the next morning all evidence of local mischief had disappeared. The patient returned home without operation, and the invariable consequence has been that the interval between the attacks has been three times longer. What better demonstration could we have that the condition of appendicitis did not exist? The next

point is one mentioned by Dr. Pepper; it is the importance of rectal examination in cases of supposed appendix trouble. My last point is this: we have two operations for appendicitis, the lateral incision for abscess without obstruction or sepsis, and the central incision for those acute cases with vomiting, obstruction and sepsis.

Dr. J. C. DA COSTA.—There are a great many unnecessary operations for appendicitis, and a great many cases called appendicitis which are not appendicitis at all. It is fashionable to have appendicitis, and fashionable to be operated upon for it. I recall a case of recent occurrence. Two surgeons were present, one an abdominal surgeon and one a general surgeon. The instruments were laid out and everything was in the house ready to go on with the operation. But I found that the temperature had fallen two degrees in consequence of the preparation for the operation, and I advised delay. In two days the patient had so much improved that there was no question of operation, and in two days more was convalescent, and finally got well without operation.

As regards palpation, my success has not been very good. I think that my fingers are as good as most; but I often fail to find the appendix, especially when tucked up under the liver. I question whether there is any man in the room with a finger long enough to map out the appendix.

I am fully in accord with Dr. Price as to the question of operation. The lateral incision is not an operation for appendicitis. You merely open an abscess cavity and wash it out. But in the case where the appendix has burst and let its contents out among the intestines, the lateral operation does no good whatever. The only thing to do in such a case is to open the abdomen in the centre

and release the intestines, break up the adhesions and wash out the pus and remove the sloughing appendix. But you will not find this among the mild cases; but in the acute, grave form, which Dr. Price has referred to.

Dr. HAMMOND.—I would ask what amount of time it is necessary to wait before making the median operation. I have seen two cases in which the operation was done in two hours after the onset. The lateral operation was done, the appendix was found and it was removed. Fæces were present in both cases. As regards the removal of the appendix, it seems to me that the lateral incision is the ideal operation, for by it you come directly upon the appendix. In one case which I operated upon by this method I had no trouble in removing the appendix and the patient recovered.

Dr. JOSEPH PRICE.—The question does not alter by position at all. In the case just referred to the toilet was apparently complete. There is no question whatever but that the operation by the later incision is the one which is able to reach the appendix; but it is difficult to satisfy the surgeon who does this operation that the toilet of the abdomen is complete. The treatment in the cases just mentioned was very prompt; there was no time for general peritonitis to occur. By the central incision there is no danger of leaving any adhesions; but these are just the class of cases which the general practitioner calls upon us to treat. Within twenty-four hours there are masses of lymph thrown out between the folds of the intestines. This is a condition which the lateral operation does not attempt to treat.

There is one point which I forgot to allude to. There are a great many cases of so-called appendicitis which are not appendicitis at all. The extra-acute cases, in which the patients die in twenty-four hours, are

not appendicitis, but perforating ulcer. Many of these cases have been reported in typhoid fever; many of them are walking cases of typhoid, in which perforation and death occurs. The profession has fallen into the habit of reporting everything as appendicitis and forgetting these cases of perforating ulcer. On opening the abdomen in these cases there is a faecal odor.

With regard to the mild cases of appendicitis, I insist that it is straining a point to include cases which are cured by catharsis. Diseases of ovaries and tubes and other organs in the abdomen are not appendicitis at all, but simply simulate appendix inflammation, and I insist that they shall not be reported as such.

Dr. NOBLE.—The first point I will speak about in replying to the questions raised in the discussion, is that of palpation of the vermiform appendix. I may say that I have given some attention to the palpation of this organ, and I must confess that I have been very much surprised at the facility with which even the normal appendix can be palpated. In some cases, of course, if the abdomen is fat or rigid, this is not true. When it was first proposed to palpate the normal vermiform appendix, I was very sceptical as to what could be learned by this procedure, but experience has convinced me of its value. When it is recalled that the anterior abdominal wall is movable, and that the posterior wall is not, it becomes apparent that the contents of the abdomen can be accurately palpated, provided the anterior abdomen wall can be sufficiently depressed to make it approximate the posterior wall at every point. This is feasible in almost all cases in the appendix region.

The position of the root of the appendix is fairly constant, and is found on a line from the umbilicus to the anterior superior spine of the ilium. In practice, the patient being

in the dorsal position, with the legs drawn up to relax the abdominal muscles, the examiner's hands are placed upon the abdominal wall about on the line before mentioned, and the common iliac artery is felt as a landmark. Then, following the direction of the line toward the ilium, every point of the posterior abdominal wall is felt. The appendix will be recognized as a small cord which rolls under the finger. Should this organ be enlarged or thickened by inflammation, it is very much more easily felt than when normal, unless of course there is so much tenderness that the abdominal muscles are rigid.

As to the practical applications of this, I may refer to a recent case. A medical man called me in to see an obscure case, which had started as an attack of grippe. It was a question as to whether it was an irregular case of grippe, or whether the condition was complicated by an attack of appendicitis, many of the symptoms of this condition being present. I found it perfectly possible to outline the normal appendix, and thus to decide by exclusion that it was a case of the grippe.

It has been said that many of these cases are not cases of appendicitis, but cases of impaction of the cæcum. This statement is contrary to the experience of all surgeons of large experience in this field. This statement is attributed to McBurney, that he never found the cæcum impacted, and that he bases his opposition to purgation in the treatment of appendicitis upon this fact. In my own experience, covering the time when I did a general practice as well as my more recent surgical experience, I have only found two cases in which the cæcum was impacted; therefore I believe that Dr. Price is wrong about this being a common occurrence.

Dr. Price states that many cases which are called appendicitis are

really not appendicitis, and proceeds to say that unless the appendix has burst, and a localized abscess has formed about this organ, or a spreading peritonitis results from the rupture, that appendicitis is not present. I wish to point out that these conditions, which Dr. Price calls appendicitis, are really not appendicitis, but merely two of the unfortunate results which may grow out of this disease. He has confounded the results of the disease with the disease itself. As a matter of fact these points should not have been touched upon in the discussion, as the subject of my contribution was "mild appendicitis."

With regard to the operation, my own opinion is that the lateral incision is best in almost all cases. When an angry general peritonitis with general sepsis is present, the experience of all surgeons is that the patients die whether the incision is made in the median line or lateral, or not at all. If, under these circumstances, the patient recovers, it is a question whether or not it is due to the operation. Some patients will recover under the most adverse circumstances, and it is to this we may attribute such recoveries, rather than to the fact that the operation was done in some particular way.

Dr. J. C. DA COSTA.—In this connection I will refer to the clinical histories of two cases that had no symptoms, and one of them bears somewhat upon the paper which was read earlier in the evening. The case was a peculiar one; the woman was tumbled into the Hospital, bringing a letter from a doctor which simply stated that she was to be operated upon. The abdomen was slightly distended, but more on the right side. The only symptoms were obstinate constipation and some vomiting; there was no fecal matter in the vomit but a little bile and whatever she took into her stomach. The woman gave the history that her

bowels had been opened two or three times on the morning that she came into the hospital. There was no pain on the right but some on the left side of the abdomen. No elevation of temperature. I tried to build up the woman for a day or two thinking that she might have to be operated upon. At the end of thirty-six hours I told the resident to get her ready, for she would surely die if unrelieved. The temperature did not go above 99° and was below 98½° for two days. I did not get her bowels moved while she was in the hospital. On the morning of the operation she told me that Dr. Price had seen her a week before and told her she should be operated upon at once. I opened the abdomen and the intestines at once bulged out, and about a gallon of pus came out in my hands. There was general peritonitis. As I broke up the adhesions the woman passed flatus upon the operating table. When I got to the right side there was an appendix which was only about three-quarters of an inch long. There was pus among the intestines and in the pelvis and pus everywhere. I sewed up the hole in the colon and flushed out the peritoneum. The next morning to my surprise the woman had two well-formed stools. For twenty-four to thirty-six hours she felt very well, then slight delirium set in and the next day in a few hours she sank and died. I think that the operation was perfectly justifiable. She was in a very dangerous condition; but there were no symptoms of appendicitis and pain was only on the left side. The second case resembled the first in the absence of symptoms. Here were two cases in which all the palpation in the world could not map out the appendix. The mass on the right side was not a tumor, but broke up in my hands as a mass of lymph and adhesions.

The second case was one of ova-

rian disease. It was an abscess, the largest I have ever seen. The woman came into my hands four weeks ago. I outlined a mass which I thought was an ovarian cyst on the right side. The woman had three or four inches of fat on her belly. I put her in training to reduce her weight, which I did considerably. During the four weeks she was under observation she only complained once of pain, and that she referred to her liver. Her temperature was $98\frac{1}{2}^{\circ}$ to 99° . I opened her abdomen at the beginning of last week and found an abscess of the ovary, nearly as large as a man's head. Everything was adherent. This case I drained and the woman has made a perfectly uneventful recovery. The stitches came out on the sixth or seventh day. I report these two cases as having such a grave condition with so few symptoms.

Dr. PRICE.—I also wish to report cases of this character. Only three days ago a case came to me of a woman who had two gallons of pus. I flushed the abdomen with hot water, and she is now getting well. I feel ashamed for my profession when gentlemen say that these cases cannot be saved. The only treatment for these cases of septic peritonitis is free opening, washing out and drainage. The other case I referred to was a woman who had been treated for two weeks for typhoid fever. She was very ill, so ill that I was inclined to refuse to accept the case. I opened the abdomen and discharged pus with a faecal odor. The abdomen was full of lymph, which I wiped off with gauze and snipped off with scissors, and the bowels seemed disorganized. I thought that this case was perfectly hopeless, yet this woman made a good recovery.

Now these two cases are typical of a class of cases which are refused by some surgeons because they are septic and they are dying. I recall a case

that was reported to me by the physician, who said he was sorry that I did not see it. He called in a gentleman now in this room, who refused to operate. The patient lived for four days, so there was ample time to do the operation. That was cowardice.

I remember a few years ago being called at mid-night to see a patient on Chestnut street. She had been singing in a church choir in the evening and was a prominent contralto. She was taken sick at church, and in thirteen hours I opened her abdomen and removed half a gallon of pus, irrigated with several pitchers of water, and she recovered and has been well since. In the case of a prominent man in the south, who was playing billiards twelve hours before I operated for appendicitis, and there was pus in the abdominal cavity. Many persons are walking the streets with pus in their abdomens. A few years ago a child was injured by a fall while coasting, and some time afterwards, while attending school, died suddenly. The coroner's physician found pus in her abdomen. I think it very unfortunate that any physician should object to operating in these cases because there is pus in the abdomen. McMurtrie of Louisville believes that suppurative peritonitis is incurable. Some seven or eight years ago he announced his opinion at the meeting of the American Medical Association. After the paper was read a physician rose and said that he had been called to see a woman in the country with typhoid fever, who had a belly full of pus. He operated and the patient got well and was present at the meeting.

I always regret these attempts to throw discredit upon an operation designed to save the lives of dying patients.

Dr. Charles P. Noble read a second communication entitled

ABDOMINAL HYSTERECTOMY.

The lecturer made a plea for early hysterectomy, and presented a number of specimens of fibroid tumors of the uterus, illustrating different forms of growths, with recovery after hysterectomy for these conditions. His recent experience had only confirmed the views he had expressed in a paper read a year ago. He had had two deaths out of twenty-seven hysterectomies. One death was due to degeneration of the kidneys and one to infection from diseased tubes. The uterus was amputated just below the internal os; the uterine and ovarian arteries being both secured by ligatures placed in the broad ligament; and the stump made extra-peritoneal by suturing the vesical peritoneum over the field of operation. Among the specimens shown was one of a fibroid, which had in its pelvic portion a calcareously degenerated mass, and also a cyst, the former having had the feel of a foetal head. The patient was sixty-six years of age. The calcareous fibroid felt like a foetal head and suggested ectopic pregnancy with the foetus retained for many years.

There was also a specimen of colloid tumor of the ovary, in which there was a dermoid cyst in one portion of the sac. Also another colloid tumor, which originally contained thirty-two quarts of colloid material, but was ruptured at the time of operation. This patient, who had a tumor containing thirty-two quarts upon one side, had two distinct ovarian tumors on the other side, and in addition to this had a fibroid tumor of the uterus, which was so large that it would not remain in the pelvis. The interesting point is that three ovarian tumors and a uterine fibroma had co-existed in the same patient.

Dr. PRICE.—I wish to report one more case. On the third day after delivery the patient had a general

chill followed by signs of peritonitis. I looked upon the case as perfectly hopeless and I dreaded to put the patient upon the table. I found the uterus perfectly fixed and all the adhesions possible. I injured the bowel in the primary incision. The exploration was complete from the kidney to the iliac fossæ. The bowel suture was not entirely satisfactory to me, but the patient made a good recovery. This was only one of a group of primary cases which have got well and are getting well.

Dr. NOBLE.—Following the example of my predecessors I will report a case for its general bearing upon the questions at issue. Some years ago I operated upon a woman for double ovarian tumors. One of these tumors contained fifteen quarts of pus. This woman had been septic for weeks, and indeed had been treated for consumption, as during the existence of the tumor she had had an attack of grippe, with some broncho-pneumonia. My object in referring to this case is to emphasize the fact that it is not a question as to how much pus there is in the abdominal cavity, but as to whether or not this pus is walled in by some sort of a sac. In this particular case it was the sac of an ovarian tumor. But I wish to point out that it is just as rational to say that this woman was suffering from a general suppurative peritonitis, because her belly contained fifteen quarts of pus, as it would be to say that she had the same condition if the pus was walled in by glutinate bowels, omentum, etc., so that a large part of the peritoneal cavity remained free from contamination. The point at issue is not whether patients have recovered with one ounce or one gallon of pus in the abdomen, but whether or not patients with general puerperal purulent peritonitis have recovered. So far as I am informed there is no such case of recovery on

record. A number of cases have been reported in which, after rupture of pus accumulations, either about the appendix or elsewhere, the abdomen was opened promptly, the peritoneal cavity cleaned out, and recovery has ensued. In these cases the operation was done before there was time for a general peritonitis to be set up. Reference has been made to the discussion at the Baltimore meeting of the American Medical Association. The speaker who made the statement at that meeting that he had operated upon hundreds of cases of general suppurative peritonitis, puerperal and non-puerperal, and that not ten per cent. of them had died, also said that he operated through a short incision of about two inches, and that he did not use the Trendelenburg posture. I wish to call the attention of the Society to the fact that under these circumstances it is not possible for anyone to say how extensively the peritoneal cavity is invaded. The use of vision is out of the question, and through such an incision the fingers can only explore some three or four inches, as that is their length. In other words,

for an operator under these circumstances to say that the pus invaded the entire peritoneal cavity, is simply to state what he assumes, and what he can by no possibility know.

Dr. Noble presented a specimen of a colloid ovarian cyst, in which there was a dermoid growth in one portion of the tumor. Also two ovarian tumors growing with separate pedicles from the one ovary. The patient from whom these two tumors were removed, also had a colloid ovarian tumor on the opposite ovary, containing some eight gallons of material, which was largely diffused through the peritoneal cavity, the cyst having ruptured prior to operation. This woman also had a fibroid tumor of the uterus as large as an adult head. The patient was almost moribund at the time of the operation, and died some hours later from asthenia, presumably induced by the removal of pressure from the portal circulation, which resulted in the accumulation of blood in these veins, with consequent syncope and death. It is an interesting fact that one woman had three ovarian tumors and a uterine fibroid.

REVIEW OF GYNÆCOLOGY.

ABORTION AS AN ETIOLOGICAL FACTOR IN GYNÆCOLOGY AND ITS TREATMENT. By FRANCIS FOERSTER, M. D.

Undoubtedly most cases of disease of the female genital tract can be traced directly to a defective childbirth. A large contingent follows such cases, in which from one or another cause the normal period of gestation is interrupted, in which a premature expulsion of the products of conception occurred. It is a daily occurrence that the gynecologist, to

his question: "Since when are you ailing?" receives the answer: "Since the birth of my last child," or, "that of a prior one," but often, "since such and such an abortion or miscarriage."

It is not my task to ventilate all the causes by which the normal labor can act in a deleterious way on the female genital tract. Some changes or derangements, which sooner or later may give rise to complaints, can occur even with the normal confinement. I only wish to remind you of

the extreme stretching the whole tract experiences, the subcutaneous tearing of the muscular structure of the outlet of the pelvis, the injuries to the cervix and perineum. We also have to take into consideration that after the uterus is emptied of its contents the tension of the abdominal walls ceases and that all the organs of the abdomen sink to an abnormal level, exerting thus undue pressure upon underlying structures.

But all these causes we must look upon as something natural and the results as unavoidable, yet factors with which we have to deal in gynæcology. A different aspect is offered by cases in which, by certain influences the physiological act of childbirth is interfered with and is converted into a pathological one—I mean those cases which become infected and have, in consequence, to pass through all the different stages of sepsis. This latter category is certainly yet a most fertile source for future ailment, although we have good reason to assume that our progressive times and the increasing instinctive sense for asepsis will do a great deal to bring improvement in this direction. Such an improvement necessarily must be a slow one, for it is not only the physician who comes under consideration, but also the midwife, who is still doing the greater portion of obstetric work, especially in our larger cities.

We touch hereby a subject which we must confess is sadly neglected in our country, I mean the question of midwives. While Europe is enjoying for many years the benefit derived from early efforts to regulate the functions of midwives and to take care of their proper instruction and licensing, we still find prevailing in our midst the saddest carelessness in this respect. The schools for midwifery—if we can call them such—

in this country are mostly in the hands of practitioners, who have no respected standing in the profession, who take up the matter simply as a business speculation. Their abodes are in localities not selected with respect to the purpose which they are intended for, but simply to meet the limited amount of funds which the proprietor is able to spend. As competition amongst these institutions is great, the fee asked for a short course is small, the afflux of so-called students is consequently large, especially as no further knowledge of the applicant is required than their ability to read and write.

Is this not a weak point in our community? So much more so when we see what ambitious efforts are made in general to elevate our educational standing. To so-called graduates of these schools our poorer and middle classes take refuge, when the hour of trial for the young mother arrives. Do we need to wonder that she leaves their hands, when alive, mostly as a physical wreck? Is such a state of affairs becoming to our city or to our still greater country? Is it not high time that some men of integrity take this matter in hand and wipe out the stigma which has long enough stained our reputation? More lives of unfortunate women would be saved than any threatened infectious disease can destroy; hundreds of children would be amongst the living which now through ignorance pass as still-born. Malpractice thrives vigorously here, and we can not and should not allow the control of this branch of medicine to pass from our hands. Some time ago this question was broached by a practitioner, but no material results have followed his efforts.

I am digressing from my subject, but the importance of the matter is an ample excuse.

When, as we have seen, the normal delivery requires skillful hands for its proper conduction, how much more necessary is this in cases of abortion, an occurrence in itself pathological; and yet we often see these very cases in the hands of ignorant midwives, resulting in consequences which endanger the life of the woman and render her an invalid forever. But even among physicians the importance of an abortion is often underrated, and the attention which it deserves is not always given. The same physician who will frown from undertaking any obstetrical manipulation, say application of forceps or peeling off of a placenta without thorough cleansing or disinfection of instruments and hands, we may see in a case of abortion display an inexcusable carelessness; a superficial washing of the hands, and he is ready to render his questionable services. Fortunately, we find this carelessness not the rule, but the exception. It may be difficult to find a reason for this neglect. The only explanation that I can think of is that in our medical schools the subject "Abortion" does not receive the proper attention. Lying as it does between obstetrics and gynæcology, it so happens that it experiences from both sides but slight consideration. This same reason may hold good as an excuse for the fact that there is no distinct and uniform plan of treatment of abortion up to date.

Let us review the different opinions of our own as well as of gynæcologists abroad; we see at once the greatest differences therein prevailing.

The minority of practitioners we find abstaining from examination, if they possibly can help it, trusting to a few drugs altogether. Only in cases of persisting hæmorrhage can

they be induced to resort to mechanical interference. It must impress us as if the last twenty-five years of advance in surgery have passed by here without leaving their progressive imprints. As then, so to-day, the subject is a *noli me tangere*. The sad experiences of medlers with this sensitive organ, the uterus, in pre-antiseptic times, seem still to be fresh in their recollection. The majority of practitioners have come, with slight variation, to the following mode of treatment: After the abortion is in progress, symptoms being hæmorrhage and uterine pains, the efforts of nature to throw out the products are assisted by the introduction into the vagina of a packing of cotton tampons; the result usually is a dilatation of the cervical canal and the birth of fœtus plus secundines. When after inspection the latter prove to have come away in toto, the case is considered as ended, a few doses of ergot being given to ensure uterine contractions. When the secundines do not come away, some leave the case to nature, until they become loosened and are expelled; others pack the vagina again, and if not successful, an attempt is made to remove them with the fingers. If this proves ineffectual, the forceps or a dull curette is used to obtain the result. It is not necessary to state that all this must be undertaken with the strictest observance of anti or asepsis.

The results can be temporarily satisfactory, only,—exceptionally they are permanently so.

The reason why I consider the result mainly illusory, is because the measures enumerated are inadequate to the condition we have before us.

[CONCLUDED NEXT MONTH.]

BOOK REVIEWS.

(All Exchanges and Books for Review should be sent to Dr. C. G. CUMSTON, 826 Beacon St., Boston.)

SCIENCE AND ART OF OBSTETRICS.

By THEOPHILUS PARVIN, M. D., LL. D. Professor of Obstetrics and the Diseases of Women and Children in Jefferson Medical College, Philadelphia. New (3d) edition. In one very handsome octavo volume of 677 pages, with 267 engravings, and 2 colored plates. Cloth \$4.25; leather, \$5.25. Philadelphia, Lea Brothers & Co., publishers, 1895.

This most excellent treatise on the art of obstetrics has arrived at its third edition.

In the present issue about one third has been re-written, and every page bears evidence of revision in conformity with the latest scientific advancement in this important branch of medical science.

The distinguished author and teacher has given to the American profession a work on which they can rely and it is safe to say that it ranks second to none in the English language.

The series of illustrations has been increased, rendering the work still more complete.

TRAITE CLINIQUE DES MALADIES
DER CŒUR CHE LES ENFANTS.

Par le Dr. E. Weill, Professeur agrégé à la Faculté de Médecine de Lyon, etc., Paris, 1895. Octave Doin, Editeur. Price, 8 francs.

This volume is an excellent exposition of the diseases of the heart in children. Much has been written on the cardiac diseases in adults but the

literature of this branch applied to children is exceedingly small.

Prof. Weill's work is clear, practical and complete and has a reason for being written because in the young the physiognomy and evolution of cardiac disease are different from those of the adult, and what is most important the congenital diseases of the heart are fully considered. The author treats the following subjects: the anatomy and physiology of the child heart; examination of children's hearts; pericarditis (very complete); symphyses of the pericardium; acute and chronic endocarditis; malignant endocarditis; *la maladie bleue*; hypertrophy and dilation of the heart; myocarditis.

We most highly recommend this work to all interested in infantile pathology.

GEBURTSHULFE UND GYNAKOLGIE.

Der Arbeiten aus der königlichen Frauenklinik in Dresden. Von Prof. Dr. G. Leopold. Band II. Leipzig, 1895, Verlag von S. Hirzel.

This interesting contribution to obstetrical and gynecological literature contains a vast amount of important matter.

The book opens with a description of the methods employed and results obtained at the Dresden clinic by Prof Leopold. Then follow a series of excellent papers from various contributors, viz; Straightened pelves and spontaneous delivery, by Dr. Franke; typical post-partum temperature charts, by Prof. Leopold;

thrombosis, pulmonary embolus and death, by Dr. Mahler; on the vital activity of immature children, by Dr. Jude; the diagnosis of the placental site during pregnancy and labor, by Prof. Leopold; on the wounding of the vessels of the cord in spontaneous delivery, by Prof. Leopold. Then follow four papers on various points regarding total extirpation of the uterus by the vaginal method, two of which came from the pen of Prof. Leopold, and one respectively by Drs. Berner and Woff. An interesting paper on procto-perineal plastic operations for prolapsus of the rectum, based on 105 cases, is contributed by Prof. Leopold. Dr. Fearne writes on primary carcinoma of the tubes; Dr. Lange on enucleation of myoma in the pregnant uterus; Dr. Bushbeck, on the vesico-vaginal fistulæ, the volume closing with a short résumé of 1000 laparotomies performed by the distinguished professor of Dresden.

The volume is beautifully illustrated by plates, figures and charts, and is full of interest from beginning to end.

TWENTIETH CENTURY PRACTICE.
Vol. III. New York, 1895. Wm.
Wood & Co., publishers.

The third volume of this great

work contains a large amount of interesting matter. The subjects treated are: occupation diseases, the drug habits, and poisons.

The contributors to this volume are: W. T. Councilman, M. D.; Albert L. Gihon, M. D.; Norman Kerr, M. D.; G. von Liebig, M. D.; J. H. Lloyd, M. D.; G. F. Shrady, M. D.; Beaumont Small, M. D.; James Stewart, M. D.

HANDBOOK OF DERMATOLOGY. By
A. H. OHMANN DUMESNIL, M. D.,
Prof. of Dermatology and Syphil-
ography, Marion Sims College, St.
Louis, etc. St. Louis, 1894. Quar-
terly Atlas Co., publishers.

After a careful examination of this little volume we are of the opinion that for the student and general practitioner there are no other manuals on cutaneous pathology which contain such a clear and concise *exposé* of the subject.

The work is very abundantly illustrated by full plates, a feature of the highest importance for the easy comprehension of this class of disease.

The therapeutics of skin diseases are well dealt with and many suggestions of value are to be found.

The *Handbook* will certainly be of great help to the student and practitioner and is to be highly commended.

ANNALS

—OF—

GYNÆCOLOGY AND PÆDIATRY.

DEPARTMENT OF PÆDIATRY.

Laparotomy in a Child Sixteen Months Old ; Appendicectomy ; Recovery.

LOUIS HAUCK, M. D.

ELSA M., female, aged sixteen months, still nursing, was taken sick with vomiting at about 8 P. M., April, 14. The child was healthy and strong, and up to bed time was bright and playful. No cause for present illness known except the ingestion of a small piece of banana and a little meat during the day. Vomiting had kept up all night at short intervals.

April 15, at 8 A. M., had a passage from bowels consisting of mucous and blood. Bowels had moved naturally for the last time about twenty-four hours previous.

Saw the child for the first time at 9.30 A. M.

On examination of abdomen found a tumor the size and shape of a small lemon situated immediately below the ribs and to the right of the median line. Patient was pale and somnolent, lips pale, pulse feeble and rapid, hands and feet cool, head

warm, vomiting stercoraceous and repeated every ten or fifteen minutes.

Diagnosis—Obstruction of bowels due probably to intussusception.

Advised operation, and having consent of parents, operated at 11 A. M.

Dr. Russell kindly administered chloroform and Dr. Eugene F. Hauck assisted in the operation.

The child was placed upon the kitchen table, and after having thoroughly cleansed the abdomen with soap and boiled water, it was washed with sublimated gauze dipped in warm crystal water. A median incision two inches long was made from the umbilicus downward.

On inserting the finger the tumor was easily reached and a coil of intestine felt encircling its neck. While endeavoring to get the mass out through the incision the strangulation was relieved and the cecum slipped out through the wound.

The cecum and ascending colon

were very much congested and thickened by edema, and the appendix was as thick as my little finger, and ecchymosed. I determined to remove the latter and quickly did so. Inverting the cut edge by means of three fine silk sutures, closed the opening in the gut completely. The bowel was returned into the abdomen, and having satisfied myself that the obstruction had been relieved, closed the wound with a line of buried sutures, two deep and two superficial sutures.

After cleansing the abdomen as before the operation, the wound was sprinkled with iodoform, and sublimated gauze and absorbent cotton applied and retained by means of a roller bandage.

Child rallied well from the chloroform and vomited only twice during the day, once at 1 P. M., and again at 5 P. M.; neither time was the vomiting stercoraceous, but simply consisted of a watery colorless fluid.

Urine voided twice during the afternoon.

At 3.30 P. M. the child had recovered its normal appearance and rested easy. Had allowed nothing but teaspoonful doses of crystal water since operation.

April 16. A. M. Child had rested well all night. Urine voided during night, bowels not yet moved. Ordered glycerine suppository.

April 16, P. M. Only a little dark bloody mucous was voided after the use of suppository. Child doing nicely and hungry. Ordered one-eighth grain calomel every two hours till operated. Nothing by mouth but

crystal water which child retains. No vomiting all day.

April 17. Bowels moved twice after the third powder, the second passage being copious, thin and fecal.

April 18. Child is doing well. Allowed mother's milk which was retained. No bad symptoms following, it was nursed sparingly every three hours. The first dressing was allowed to remain for seven days when it was removed and the sutures taken out. Wound had healed by first intention, and dressings were dry and clean. The second dressing was removed in five days and an ordinary binder put on.

This case is interesting for several reason, viz: the youth of patient, the cause of obstruction, the removal of appendix.

The obstruction was caused by a coil of intestine (small) encircling the ascending colon and drawing it up toward the liver. This was possible on account of the unusual length of the mesocolon, which allowed the cecum to move freely and to be caught by the strangulating loop. The portion of small intestine between the loop and the cecum was empty. The appendix was removed, not so much on account of its appearance as on general principles. I believe it would be justifiable practice to remove the appendix in every case where the abdomen has been opened for other causes, as it takes only a few minutes to do it, and does not increase the danger to patient. At the same time it removes the source of great dangers in the future, for we know that appendicitis is a very common complaint.

A point in the treatment of this case I wish to call attention to is the early administration of a laxative. I believe that the old practice of putting the bowels in a splint with opium has been abandoned.

Today, five weeks after the oper-

ation, the child is well. Two weeks after operation the child contracted a severe follicular tonsilitis which somewhat weakened it, but from which it recovered entirely in a few days.—*The Medical Fortnightly*.

EDITORIAL.

The Medical Inspection of Schools.

IN November, 1894, for the purpose of detecting and preventing disease among school children, the Board of Health of the city of Boston inaugurated the systematic inspection of schools by a corp of competent physicians.

As early as 1892 similar measures were urged by the Board, but the movement failed because of lack of sufficient appropriations. In 1894, however, the prevalence of diphtheria in Boston induced the city authorities to provide the necessary money and the present system was inaugurated. From the twenty-third annual report of the Health Department we quote the following:—

“The Board of Health at once selected fifty physicians for this purpose, divided the city into fifty school districts, and began school inspection on November 1, 1894. These physicians are appointed Medical Inspectors of Schools and Agents of the Board of Health, and are authorized to visit each school daily, during the early part of the morning session and to examine all pupils who complain, or appear to the teachers to be ill. If an inspector finds a pupil showing symptoms of

any contagious disease, or is otherwise too ill to remain in school, he will advise the teacher to send the pupil home for the temporary observation of its parents or family physician. He will also give such professional advice as may be required by the teachers to aid them in carrying out all laws and regulations pertaining to contagious diseases, vaccination, and general school hygiene, whose enforcement belongs to the School Committee or Board of Health. In the examination of throats the Medical Inspectors will use only the wooden tongue-depressors which are furnished by the Board of Health, each of which is to be burned after a single use.

No pupil is to be prescribed for or advised by the Medical Inspector excepting such general advice as may be sought through the intervention of the teacher in behalf of poor children.

The Medical Inspectors of Schools are also authorized agents of the Board of Health; and will, on notification from said Board, visit all cases of scarlet fever and diphtheria at the homes of the patients, for the sole purpose of examining the places and plans of their isolation; and, as such agents, they will report to the Board of Health their approval or disapproval of such places and plans of isolation. Such medical agent will not prescribe advice or criticise anything beyond that which pertains strictly to the

isolation of the patient ; and will carefully avoid any word or act which may be construed as an infringement upon the rights of the family or attending physician. He will visit the patient as often as may be necessary to inform himself as to the continued isolation of the case. No case of scarlet fever or diphtheria will be discharged from isolation until its complete recovery is certified to the Board of Health by one of its medical agents; and such certificates of recovery will be based on the complete disappearance of desquamation in cases of scarlet fever, and on the absence of the Klebs-Loeffler bacillus in cases of diphtheria,—the latter to be shown by bacteriological examination made satisfactory to the Board of Health.

The reports of the Medical Inspectors of Schools for the months of November and December show that 4,962 pupils were presented to them for examination; and 564 were found to be too ill to remain in school for the time being; 212 were suffering from some contagious diseases; 43 were suffering from diphtheria; and 131 were too ill from troubles in the eyes and ears to be in school. Diseases

in the throat were most prevalent, and were found in 1,749 pupils. Diseases of the eye, ear, and spine are found sufficiently often among the school children to warrant a more careful examination to find those who may be suffering from mild forms or early stages of these diseases. It often happens that school children suffer serious and unrecognized disadvantages by reason of defective eyesight, deficient hearing, or a commencing deformity of the spine. The mild forms and early stages of these ills would not generally be seen and appreciated by the teachers; and it would be unreasonable to expect them to detect illnesses which require special skill on the part of the physician to recognize."

Such a system as the above described is worthy of imitation by every community throughout the land, and the Boston Health authorities are to be congratulated in having led the way in the inauguration of an inspection, the benefits of which cannot be over-estimated.



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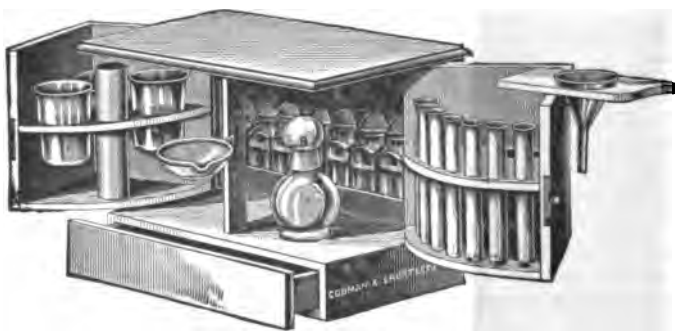
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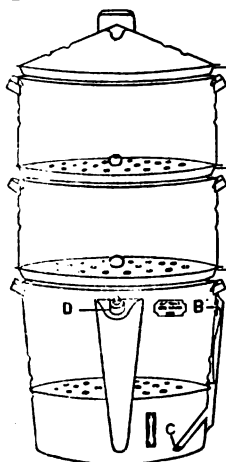
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